STIC Search


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=> fil reg
FILE 'REGISTRY' ENTERED AT 15:58:19 ON 07 OCT 2003
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STRUCTURE FILE UPDATES:    5 OCT 2003  HIGHEST RN 599148-37-5
DICTIONARY FILE UPDATES:   5 OCT 2003  HIGHEST RN 599148-37-5

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2003

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available.  See HELP
PROPERTIES for more information.  See STNote 27, Searching Properties
in the CAS Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> d l74 ide can tot

L74  ANSWER 1 OF 2  REGISTRY  COPYRIGHT 2003 ACS on STN
RN   9012-76-4  REGISTRY
CN   Chitosan (8CI, 9CI)  (CA INDEX NAME)
OTHER NAMES:
CN   100D-VL
CN   Amidan
CN   BC 10
CN   BC 10 (polysaccharide)
CN   Biopolymer L 112
CN   Chicol
CN   Chitan, N-acetyl-
CN   Chitin, N-deacetyl-
CN   Chitoclear
CN   Chitofos
CN   Chitolaze
CN   Chitopearl 3510
CN   Chitopearl BC 3000
CN   Chitopearl BCW 2500
CN   Chitopearl BCW 3000
CN   Chitopearl BCW 3500
CN   Chitopearl BCW 3505
CN   Chitopearl BCW 3507
CN   Chitopearl K 20
CN   Chitosan 500
CN   Chitosan CLH
CN   Chitosan EL
CN   Chitosan F
CN   Chitosan FL
CN   Chitosan H
CN   Chitosan LL
CN   Chitosan LL 80
CN   Chitosan LLWP
CN   Chitosan M
CN   Chitosan MP
CN   Chitosan PSH
CN   Chitosan SK 10
CN   Chitosan VL
```

Jan Delaval
Reference Librarian
Biotechnology & Chemical Library
CM1 1E07 – 703-308-4498
jan.delaval@uspto.gov

CN Chitosol
CN Chitosom
CN Crystan LA-S
CN CTA 1 Lactic Acid
CN CTA 4
CN DAC 50
CN DAC 70
CN Daichitosan 100DVL
CN Daichitosan DVL
CN Daichitosan P-VL
CN Daichitosan VL
CN Daichitosan VLA
CN Daichitosan W 10
CN Deacetylchitin
CN FCM 117
CN Flonac C
CN Flonac H
ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for DISPLAY
DR 57285-05-9
MF Unspecified
CI PMS, COM, MAN
PCT Manual registration, Polyother, Polyother only
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DIOGENES, DRUGU, EMBASE, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, NAPRALERT, PHAR, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, USAN, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: NDSL**, TSCA**, WHO
(**Enter CHEMLIST File for up-to-date regulatory information)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
12052 REFERENCES IN FILE CA (1907 TO DATE)
2209 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
12090 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 139:235940

REFERENCE 2: 139:235498

REFERENCE 3: 139:235488

REFERENCE 4: 139:235399

REFERENCE 5: 139:235340

REFERENCE 6: 139:235291

REFERENCE 7: 139:235290

REFERENCE 8: 139:235280

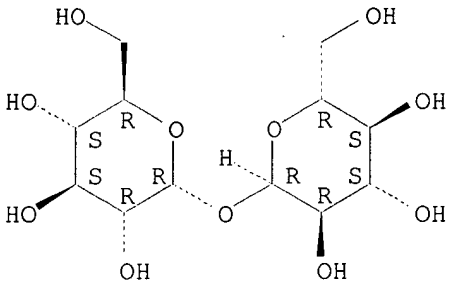
REFERENCE 9: 139:235226

REFERENCE 10: 139:235206

L74 ANSWER 2 OF 2 REGISTRY COPYRIGHT 2003 ACS on STN
RN **99-20-7** REGISTRY
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Trehalose (8CI)
OTHER NAMES:

CN .alpha.,.alpha.'-D-Trehalose
CN .alpha.,.alpha.-Trehalose
CN .alpha.-D-Trehalose
CN .alpha.-Trehalose
CN D-(+)-Trehalose
CN D-Trehalose
CN Ergot sugar
CN Mycose
CN Natural trehalose
CN NSC 2093
CN Treha
CN Trehaose
FS STEREOSEARCH
DR 229966-89-6
MF C12 H22 O11
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DRUGU, EMBASE, GMELIN*, HODOC*, IFICDB, IFIUDB, IPA, MEDLINE, MRCK*, NAPRALERT, PIRA, PROMT, SPECINFO, TOXCENTER, TULSA, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry. Rotation (+).



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

5985 REFERENCES IN FILE CA (1907 TO DATE)
297 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
5999 REFERENCES IN FILE CAPLUS (1907 TO DATE)
64 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 139:235429

REFERENCE 2: 139:235194

REFERENCE 3: 139:235002

REFERENCE 4: 139:235001

REFERENCE 5: 139:229740

REFERENCE 6: 139:229644

REFERENCE 7: 139:229549

REFERENCE 8: 139:229428

REFERENCE 9: 139:227007

REFERENCE 10: 139:226862

=> d his

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     (FILE 'HOME' ENTERED AT 15:17:49 ON 07 OCT 2003)
                SET COST OFF

     FILE 'REGISTRY' ENTERED AT 15:18:00 ON 07 OCT 2003
                E CHITOSAN/CN
L1             1 S E3
                E CHITOSAN
L2          1498 S E3
L3          1497 S L2 NOT L1
L4          1433 S L3 NOT SQL/FA
                E TREHALOSE/CN
L5             1 S E3
L6           115 S 99-20-7/CRN
L7           763 S 9012-76-4/CRN
L8             0 S L6 AND L7
L9          1433 S L4,L7

     FILE 'HCAPLUS' ENTERED AT 15:20:48 ON 07 OCT 2003
L10        12093 S L1
L11         3160 S L9
L12        15211 S CHITOSAN
L13         3172 S L3
L14        15784 S L10-L13
L15         5999 S L5
L16          167 S L6
L17         8262 S TREHALOSE
L18         8696 S L15-L17
L19           72 S L14 AND L18
L20           70 S L19 AND (PY<=1999 OR PRY<=1999 OR AYT<=1999)
                E WORRALL E/AU
L21            8 S E3,E4,E9
                E ANHYDRO/PA,CS
L22           35 S E3-E13
                E WO2000-GB2254/AP,PRN
                E GB99-14412/AP,PRN
L23           43 S L21,L22
L24            0 S L23 AND L14
L25            3 S L23 AND L18
                E PRESERVATION/CT
                E E3+ALL
L26         2148 S E1
L27        11897 S E1+NT
                E E14+ALL
L28          423 S E3
L29          601 S E3+NT
                E E2+ALL
L30         5084 S E2
L31           42 S L18 AND L26
L32          214 S L18 AND L27-L30
L33            4 S L14 AND L26
L34          194 S L14 AND L27-L30
L35            8 S L31,L32 AND L33,L34
                SEL DN AN 4
L36            1 S L35 AND E1-E3
L37            4 S L25,L36
                E FREEZE DRYING/CT
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                E E3+ALL
L38         4716 S E12
                E E15+ALL
L39        19277 S E2,E1+NT
L40          297 S L18 AND L38
L41          139 S L18 AND L39
L42           68 S L14 AND L38
L43           20 S L14 AND L39
L44            8 S L19 AND L31-L34
L45            5 S L19 AND L40-L43
L46           12 S L44,L45
L47            1 S L46 AND L37
L48           11 S L46 NOT L47
                SEL DN AN 6 7
L49            2 S E1-E6 AND L48
L50            6 S L37,L47,L49
L51            6 S L50 AND L10-L50
                E DRYING/CT
                E E3+ALL
L52        32988 S E2
                E E1+ALL
L53          443 S E1
                E E6+ALL
L54        19277 S E2,E1+NT
                E E13+ALL
L55        25489 S E6,E7,E5
L56          334 S L18 AND L52-L55
L57          133 S L14 AND L52-L55
L58            6 S L19 AND L56,L57
L59            3 S L51 AND L52-L57
L60            6 S L51,L59
L61          637 S (BIOCHEM?(L)METHOD?)/SC,SX AND L14
L62          649 S (BIOCHEM?(L)METHOD?)/SC,SX AND L18
L63           95 S L61,L62 AND L31-L34
L64           22 S L63 AND L38-L41
L65           21 S L63 AND L52-L57
L66           27 S L64,L65
L67           16 S L66 AND (PY<=1999 OR PRY<=1999 OR AY<=1999)
L68            0 S L66 AND L19
L69           11 S L66 NOT L67
L70           32 S L60,L67,L69
L71           19 S L70 AND (PY<=1999 OR PRY<=1999 OR AY<=1999)
L72           21 S L37,L71
L73           11 S L70 NOT L72
                SEL HIT RN L70

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L74            2 S E1-E2

     FILE 'REGISTRY' ENTERED AT 15:58:19 ON 07 OCT 2003

=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 15:58:29 ON 07 OCT 2003
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STIC Search

FILE COVERS 1907 - 7 Oct 2003 VOL 139 ISS 15
FILE LAST UPDATED: 6 Oct 2003 (20031006/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d l72 all hitstr tot

L72 ANSWER 1 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2003:667367 HCAPLUS
DN 139:161828
TI Viable dried bacteria produced by drying in the presence of **trehalose** and divalent cation
IN Mateczun, Alfred J.; Peruski, Leonard F., Jr.
PA United States Dept. of the Navy, USA
SO U.S., 5 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM A61K045-00
ICS A01N063-00; C12N001-00; C12N001-12; C12N001-20
NCL 435260000; 424093400; 424282100; 435252100; 435252330; 435822000; 435849000; 435879000; 435909000
CC **9-16** (**Biochemical Methods**)
Section cross-reference(s): 10
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6610531	B1	20030826	US 1998-159568	19980924 <--
	US 2003044965	A1	20030306	US 2002-108344	20020329 <--
PRAI	US 1998-159568	B2	19980924 <--		

AB A method is provided for preserving live bacteria by subjecting an aq. system contg. the growing bacteria to drying without special equipment, in the presence of **trehalose** with or without the addn. of divalent cations as stabilizing agents. Further, a dried compn. for preservation of aerobic bacteria in a viable state is provided. The dried compn. consists essentially of dried viable aerobic bacteria and an appropriate growth medium. The bacteria and growth medium are initially placed in an aq. soln. of 10 mM to 200 mM **trehalose** and a divalent cation, and dried at room temp.
ST viable dried bacteria drying **trehalose** divalent cation
IT Cations
(divalent; viable dried bacteria produced by drying in presence of **trehalose** and divalent cation)
IT **Hydration, physiological**
(rehydration; viable dried bacteria produced by drying in presence of **trehalose** and divalent cation)
IT Aerobic bacteria
Bacteria (Eubacteria)
Composition
Containers
Culture media
Drying
Escherichia coli
Gram-negative bacteria
Preservation
Preservation solutions (tissue)

Salmonella typhimurium
Sealing
Separation
Shigella flexneri
Solutions
Stabilizing agents
Suspensions
Temperature
Vibrio cholerae
Volume
(viable dried bacteria produced by drying in presence of **trehalose** and divalent cation)

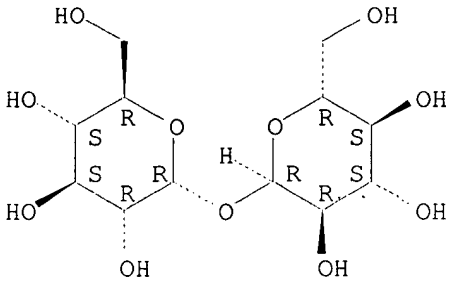
IT **99-20-7, Trehalose** 7646-85-7, Zinc chloride (ZnCl2), biological studies 7732-18-5, Water, biological studies 7786-30-3, Magnesium chloride (MgCl2), biological studies 10043-52-4, Calcium chloride (CaCl2), biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(viable dried bacteria produced by drying in presence of **trehalose** and divalent cation)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Anon; EP 0120111 A1 1984
(2) Goodrich; US 5800978 A 1998 HCAPLUS
(3) Kosanke; US 5695541 A 1997
(4) Paau; US 4875921 A 1989

IT **99-20-7, Trehalose**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(viable dried bacteria produced by drying in presence of **trehalose** and divalent cation)

RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

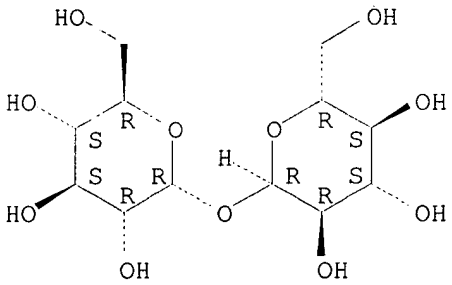
Absolute stereochemistry. Rotation (+).



L72 ANSWER 2 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2003:213042 HCAPLUS
DN 138:242963
TI Xerovac: an ultra rapid method for the dehydration and preservation of live attenuated Rinderpest and Peste des Petits ruminants vaccines. [Erratum to document cited in CA135:231554]
AU **Worrall, E. E.**; Litamoi, J. K.; Seck, B. M.; Ayelet, G.
CS Ty Mawr, Trefilan, Lampeter, Dyfed, SA48 8RD, UK
SO Vaccine (2001), 19(28-29), 4086
CODEN: VACCDE; ISSN: 0264-410X
PB Elsevier Science Ltd.
DT Journal
LA English
CC 63-3 (Pharmaceuticals)

AB On page 839, in Table 5, second column headed "Liq. virus pool titer + **trehalose**", the data on the first line should read 6.0 not 0.0. The cor. Table 5 is given.
ST erratum dehydration preservation ruminant vaccine **trehalose**; dehydration,preservation ruminant vaccine **trehalose** erratum
IT Bacteria (Eubacteria)
Dehydration, physiological
Freeze drying
Peste-des-petits-ruminants virus
Preservation
Rinderpest virus
Ruminant
Virus
(ultra rapid dehydration and preservation of live attenuated Rinderpest and Peste des Petits ruminants vaccines (Erratum))
IT **99-20-7, Trehalose**
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(ultra rapid dehydration and preservation of live attenuated Rinderpest and Peste des Petits ruminants vaccines (Erratum))
IT **99-20-7, Trehalose**
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(ultra rapid dehydration and preservation of live attenuated Rinderpest and Peste des Petits ruminants vaccines (Erratum))
RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L72 ANSWER 3 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2001:396599 HCAPLUS
DN 135:2554
TI Formulation of preservation mixtures containing sensitive biologicals to be stabilized for ambient temperature storage by drying
IN Bronshtein, Victor; Linkowski, Lynn
PA Universal Preservation Technologies, Inc., USA
SO PCT Int. Appl., 34 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A01N001-02
CC **9-11** (**Biochemical Methods**)
Section cross-reference(s): 63
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001037656	A2	20010531	WO 2000-US32261	20001122 <--
WO 2001037656	A3	20020110		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KR,

KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

EP 1231837 A2 20020821 EP 2000-980766 20001122 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
BR 2000015738 A 20030415 BR 2000-15738 20001122 <--
JP 2003514556 T2 20030422 JP 2001-539285 20001122 <--
PRAI US 1999-166928P P 19991122 <--
WO 2000-US32261 W 20001122

AB This invention relates to formulations and methods for preserving sensitive biologicals, viruses, bacteria and eukaryotic cells by drying. More particularly, the invention relates to preservation mixts. comprising viruses or cells and protectants, including methylated monosaccharides, wherein the mixts. are adapted to stabilize these samples during dehydration and subsequent storage at ambient and higher temps.

ST biol preservation preservative formulation drying storage

IT Whey
(albumins of; formulation of preservation mixts. contg. sensitive biologicals to be stabilized for ambient temp. storage by drying)

IT Health products
(biologicals; formulation of preservation mixts. contg. sensitive biologicals to be stabilized for ambient temp. storage by drying)

IT Bovine respiratory syncytial virus
Human parainfluenza virus 3
Newcastle disease virus
Streptococcus equi
(drying and storage of; formulation of preservation mixts. contg. sensitive biologicals to be stabilized for ambient temp. storage by drying)

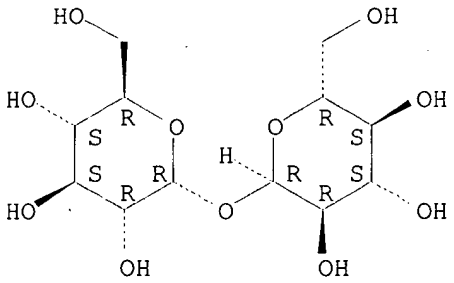
IT Bacteria (Eubacteria)
Crystallization
Drying
Eukaryote (Eukaryotae)
Freeze drying
Preservation
Preservatives
Prokaryote
Storage
Temperature effects, biological
Virus
(formulation of preservation mixts. contg. sensitive biologicals to be stabilized for ambient temp. storage by drying)

IT Albumins, biological studies
Disaccharides
Gelatins, biological studies
Monosaccharides
Polymers, biological studies
Polyoxyalkylenes, biological studies
Proteins, general, biological studies
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified); BIOL (Biological study); USES (Uses)
(formulation of preservation mixts. contg. sensitive biologicals to be stabilized for ambient temp. storage by drying)

IT Monosaccharides
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified); BIOL (Biological study); USES (Uses)
(methylated derivs.; formulation of preservation mixts. contg. sensitive biologicals to be stabilized for ambient temp. storage by

drying)
IT Oligosaccharides, biological studies
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified); BIOL (Biological study); USES (Uses)
(non-reducing derivs.; formulation of preservation mixts. contg. sensitive biologicals to be stabilized for ambient temp. storage by drying)
IT Globulins, biological studies
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified); BIOL (Biological study); USES (Uses)
(of whey; formulation of preservation mixts. contg. sensitive biologicals to be stabilized for ambient temp. storage by drying)
IT **Drying**
(spray; formulation of preservation mixts. contg. sensitive biologicals to be stabilized for ambient temp. storage by drying)
IT 9001-58-5, Isocitrate dehydrogenase 61969-99-1, luciferase
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(drying and storage of; formulation of preservation mixts. contg. sensitive biologicals to be stabilized for ambient temp. storage by drying)
IT 512-69-6, Raffinose
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(formulation of preservation mixts. contg. sensitive biologicals to be stabilized for ambient temp. storage by drying)
IT 57-50-1, Sucrose, biological studies 97-30-3, Methyl .alpha.-glucopyranoside **99-20-7, Trehalose** 142-47-2, Monosodium glutamate 709-50-2 9003-39-8, Pvp 12619-70-4, Cyclodextrin 25322-68-3, polyethylene glycol
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified); BIOL (Biological study); USES (Uses)
(formulation of preservation mixts. contg. sensitive biologicals to be stabilized for ambient temp. storage by drying)
IT **99-20-7, Trehalose**
RL: BUU (Biological use, unclassified); NUU (Other use, unclassified); BIOL (Biological study); USES (Uses)
(formulation of preservation mixts. contg. sensitive biologicals to be stabilized for ambient temp. storage by drying)
RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L72 ANSWER 4 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2001:64128 HCAPLUS
DN 134:97541
TI Storage of microorganisms, cells and tissue
IN Codd, Anthony Arthur
PA Public Health Laboratory Service Board, UK
SO PCT Int. Appl., 33 pp.
CODEN: PIXXD2

DT Patent
LA English
IC ICM C12N005-00
CC **9-16 (Biochemical Methods)**
Section cross-reference(s): 10, 17
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001005941	A2	20010125	WO 2000-GB2738	20000717 <--
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	JP 2003505024	T2	20030212	JP 2001-511155	20000717 <--
	ZA 2002000340	A	20021010	ZA 2002-340	20020115 <--
PRAI	GB 1999-16790	A	19990716 <--		
	WO 2000-GB2738	W	20000717		

AB A compn. for preserving viable microorganisms, cells or tissue comprises (a) a preservative combination of (i) a non-reducing disaccharide and (ii) a bulking agent; and (b) a buffer. Also described is a method of preserving viable microorganisms, cells or tissue, comprising combining viable microorganisms, cells or tissue with a preserving soln. comprising a non-reducing disaccharide, drying the combination to form a dried prepn. having a solids content of at least 80% by wt., and counting the viable microorganisms, cells or tissue in the dried prepn., whereby the dried prepn. can be combined with aq. buffer to yield an aq. prepn. comprising a predetd. count of viable microorganisms, cells or tissue.

ST storage microorganism cell tissue

IT Pressure
(Atm.; storage of microorganisms, cells and tissue)

IT Proteins, general, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(High mol. wt.; storage of microorganisms, cells and tissue)

IT Disaccharides
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(Non-reducing; storage of microorganisms, cells and tissue)

IT Carbohydrates, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(Water-sol. polymeric; storage of microorganisms, cells and tissue)

IT Animal cell
(mammalian; storage of microorganisms, cells and tissue)

IT Temperature
(reduced; storage of microorganisms, cells and tissue)

IT Carbohydrates, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(reducing sugars; storage of microorganisms, cells and tissue)

IT Albumins, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(serum; storage of microorganisms, cells and tissue)

IT Air
Animal tissue
Bacteria (Eubacteria)
Buffers

Cell
Coloring materials
Composition
Dehydration
Drying
Drying agents
Erythrocyte
Escherichia coli
Feces
Food processing
Fungi
Microorganism
Preservation
Preservatives
Protozoa
Storage
Urine
Virus
(storage of microorganisms, cells and tissue)

IT Albumins, biological studies
Monosaccharides
Noble gases, biological studies
Silica gel, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(storage of microorganisms, cells and tissue)

IT Pharynx
(swabs; storage of microorganisms, cells and tissue)

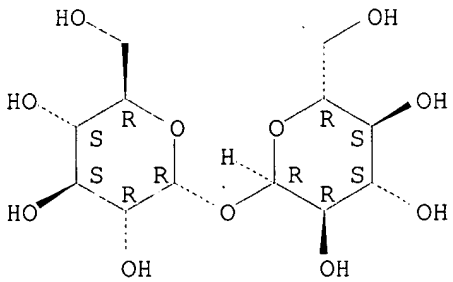
IT 7732-18-5, Water, biological studies 7782-44-7, Oxygen, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(storage of microorganisms, cells and tissue)

IT 50-99-7, Glucose, biological studies 57-50-1, Sucrose, biological studies 63-42-3, Lactose 69-79-4, Maltose **99-20-7**, **Trehalose** 111-30-8, Glutaraldehyde 528-50-7, Cellobiose 9004-32-4, Carboxymethylcellulose 9004-34-6D, Cellulose, Hydroxyalkyl, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(storage of microorganisms, cells and tissue)

IT **99-20-7, Trehalose**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(storage of microorganisms, cells and tissue)

RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L72 ANSWER 5 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 2000:911307 HCAPLUS
DN 134:68451
TI Enhanced stability and performance of cells and cell components
IN Potts, Malcolm; Helm, Richard
PA Virginia Tech Intellectual Properties, Inc., USA
SO PCT Int. Appl., 20 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C08B037-00
ICS C07H001-08; C12P019-04; G01N001-30; G01N033-48
CC **9-16 (Biochemical Methods)**
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000078816	A1	20001228	WO 2000-US16603	20000616 <--
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 1203027	A1	20020508	EP 2000-942871	20000616 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL				

PRAI US 1999-139738P P 19990618 <--
US 2000-178703P P 20000128
WO 2000-US16603 W 20000616

AB The present invention provides a compn. of matter comprising a substantially purified extracellular polysaccharide (EPS) from the terrestrial cyanobacterium Nostoc commune. When mixed with labile material (such as cells or cellular components) the EPS affords protection to the cells during desiccation and long-term storage. The invention thus provides an improved method for room temp. long-term storage of labile material.

ST stability performance cell component
IT Storage
(Long-term; enhanced stability and performance of cells and cell components)
IT Carbohydrates, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(Nonreducing; enhanced stability and performance of cells and cell components)
IT Heating
(autoclaving; enhanced stability and performance of cells and cell components)
IT Agrochemicals
(bio-; enhanced stability and performance of cells and cell components)
IT Air
Animal cell
Cell
Composition
Drugs
Drying
Eukaryote (Eukaryotae)
Freeze drying
Genetic engineering
Mammal (Mammalia)
Matter

Mixing
Nostoc commune
Pesticides
Preservation
Prokaryote
Purification
Stability
Vacuum
Virus
(enhanced stability and performance of cells and cell components)

IT Alditols
Carbohydrates, biological studies
Cyclitols
Noble gases, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(enhanced stability and performance of cells and cell components)

IT Polysaccharides, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(exopolysaccharides; enhanced stability and performance of cells and cell components)

IT Animal tissue
(mammalian; enhanced stability and performance of cells and cell components)

IT Alcohols, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(polyhydric; enhanced stability and performance of cells and cell components)

IT Temperature
(room; enhanced stability and performance of cells and cell components)

IT **Drying**
(spray; enhanced stability and performance of cells and cell components)

IT Biological transport
(uptake; enhanced stability and performance of cells and cell components)

IT 57-50-1, Sucrose, biological studies **99-20-7, Trehalose**
470-55-3, Stachyose 470-57-5, Planteose 512-69-6, Raffinose
597-12-6, Melezitose
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(enhanced stability and performance of cells and cell components)

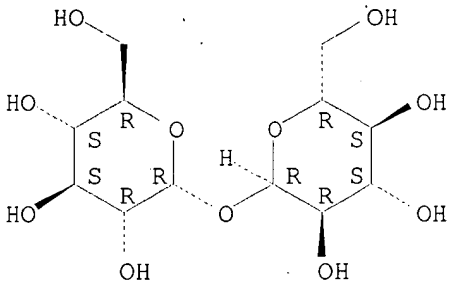
IT 300823-68-1
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(repeating unit, enhanced stability and performance of cells and cell components)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Fischer; Planta Med 1993, V59(7), PA615
(2) Hill; J Appl Phycol, CAplus 1997:768211 1997, V9(3), P237 HCAPLUS
(3) Huang; J Phycol, CAplus 1999:69315 1998, V34(6), P962 HCAPLUS

IT **99-20-7, Trehalose**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(enhanced stability and performance of cells and cell components)

RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

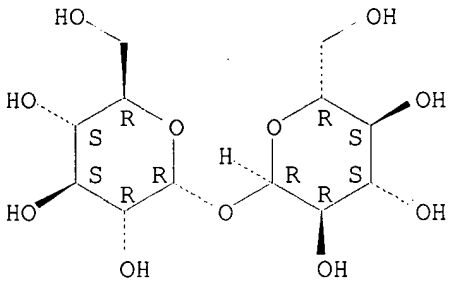


L72 ANSWER 6 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2000:874736 HCAPLUS
DN 135:231554
TI Xerovac: an ultra rapid method for the dehydration and preservation of live attenuated Rinderpest and Peste des Petits ruminants vaccines
AU **Worrall, E. E.**; Litamoi, J. K.; Seck, B. M.; Ayelet, G.
CS Ty Mawr, Trefilan, Lampeter, Dyfed, SA48 8RD, UK
SO Vaccine (2000), 19(7-8), 834-839
CODEN: VACCDE; ISSN: 0264-410X
PB Elsevier Science Ltd.
DT Journal
LA English
CC 63-3 (Pharmaceuticals)
AB The accepted procedure for the long-term preservation of live viruses and bacteria in vaccines has been lyophilization. We show that thermolabile viruses can be dehydrated in vitro, within 18 h, in an excipient contg. **trehalose**. We further demonstrate that in the resulting dehydrated state, where the viruses are captive in a metastable glass composed of **trehalose**, they are capable of resisting 45.degree.C for a period of 14 days with minimal loss of potency. The degree of thermotolerance achieved matches that of current 'thermostable' lyophilized vaccines, but with the distinct advantage of a shorter, cheaper and simpler process. The development and utilization of this process can make significant improvements in current live virus vaccine prodn. It presents a further step away from dependence on mandatory low temp. refrigerated storage and could lead to greater confidence in vaccine stability, potency and efficacy.
ST dehydration preservation ruminant vaccine **trehalose**
IT Bacteria (Eubacteria)
Dehydration
Freeze drying
Peste-des-petits-ruminants virus
Preservation
Rinderpest virus
Ruminant
Virus
(ultra rapid dehydration and preservation of live attenuated Rinderpest and Peste des Petits ruminants vaccines)
IT **99-20-7, Trehalose**
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(ultra rapid dehydration and preservation of live attenuated Rinderpest and Peste des Petits ruminants vaccines)
RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Clegg, J; J Comp Biochem Physiol 1967, V20, P801 HCAPLUS
(2) Colaco, C; Biotechnology 1992, P10
(3) Coutinho, E; J Biotechnol 1988, V7, P23
(4) Crowe, J; Cryobiology 1990, V27, P219 HCAPLUS
(5) Franks, F; Biopharm 1991, V4, P38 HCAPLUS
(6) Kinchin, I; Biologist 1995, V42, P4

(7) Levine, H; Biopharm 1992, V5, P36 HCAPLUS
(8) Mariner, J; Vet Microbiol 1990, V21, P195 HCAPLUS
(9) Reynolds, T; Adv Food Res 1965, V14, P167 MEDLINE
(10) Rweyemamu, M; FAO Animal Production and Health Paper 1994, 118
(11) Seki, K; Nature 1998, P395
(12) Williams, R; Plant Physiol 1989, V89, P977

IT **99-20-7, Trehalose**
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(ultra rapid dehydration and preservation of live attenuated Rinderpest and Peste des Petits ruminants vaccines)
RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L72 ANSWER 7 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2000:790612 HCAPLUS
DN 133:319293
TI Method for the preservation of viruses and mycoplasma
IN **Worrall, Eric Edward**
PA UK
SO PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12N001-04
ICS C12N007-02; A61K039-155; A61K039-165; A61K039-20; A61K039-12; A61K039-13; A61K039-17
CC **9-11 (Biochemical Methods)**
Section cross-reference(s): 10, 63
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000066710	A2	20001109	WO 2000-GB1524	20000503 <--
	WO 2000066710	A3	20010208		
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 1175486	A2	20020130	EP 2000-927438	20000503 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	BR 2000010249	A	20020213	BR 2000-10249	20000503 <--
	JP 2002542815	T2	20021217	JP 2000-615735	20000503 <--
PRAI	GB 1999-9999	A	19990504 <--		

GB 1999-26698 A 19991112 <--
WO 2000-GB1524 W 20000503

AB A biol.-active material comprising a live virus or mycoplasma is preserved by a method of desiccation, without lyophilization, in a matrix of glassy **trehalose** having a residual moisture content of not greater than 2%. The method comprises two vacuum drying stages. In a cycle time much shorter than a typical freeze drying process a virus or mycoplasma can be preserved to provide a material that can be rehydrated to give a vaccine having potency.

ST preservation virus mycoplasma

IT **Drying**
Freeze drying
Human poliovirus
Measles virus
Mixing
Mumps virus
Mycoplasma
Mycoplasma mycoides mycoides
Newcastle disease virus
Peste-des-petits-ruminants virus
Preservation
Pressure
Rinderpest virus
Rubella virus
Suspensions
Temperature
Vaccines
Vacuum
Virus
Yellow fever virus
(method for preservation of viruses and mycoplasma)

IT **Hydration, physiological**
(rehydration; method for preservation of viruses and mycoplasma)

IT 7732-18-5, Water, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(method for preservation of viruses and mycoplasma)

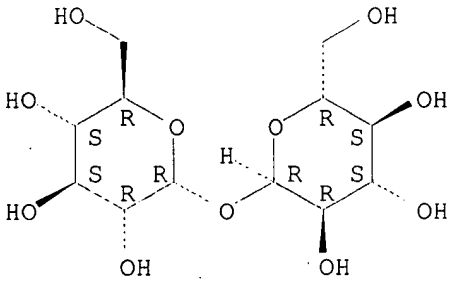
IT **99-20-7, Trehalose**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(method for preservation of viruses and mycoplasma)

IT **99-20-7, Trehalose**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(method for preservation of viruses and mycoplasma)

RN 99-20-7 HCAPLUS

CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L72 ANSWER 8 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN

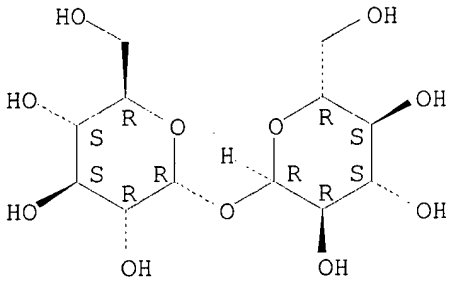
AN 2000:151414 HCAPLUS
DN 132:205128
TI A method for preserving mammalian organs removed
IN Seki, Kunihiro
PA Kanagawa University, Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM A01N001-02
CC **9-11 (Biochemical Methods)**
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000072601	A2	20000307	JP 1998-245052	19980831 <--
PRAI	JP 1998-245052		19980831 <--		

AB A method is provided for preserving mammalian organs removed (e.g., heart) for a long term. Mammalian organs removed are dehydrated using a dehydration agent (e.g., silica gel), soaked in a water- and oil-insol. inactive medium (e.g., perfluorocarbon, silicone oil), and maintained at a refrigeration temp. The effectiveness of this method was examinded with heart removed from rat by an electrophysiol. method i.e., ECG.

ST organ preservation soln dehydration perfluorocarbon refrigeration
IT Heart
(ECG; method for preserving mammalian organs removed)
IT **Dehydration**
Drying agents
Heart
Mammal (Mammalia)
Organ, animal
Organ preservation
Preservation solutions (tissue)
Rat
Refrigeration
Silica gel adsorbents
(method for preserving mammalian organs removed)
IT Perfluorocarbons
Polysiloxanes, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(method for preserving mammalian organs removed)
IT **99-20-7, Trehalose**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(method for preserving mammalian organs removed)
IT **99-20-7, Trehalose**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(method for preserving mammalian organs removed)
RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L72 ANSWER 9 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
AN **2000:98194** HCAPLUS
DN **132:133614**
TI Agents containing sugar- or sugar alcohol-type surfactants and other substances for preserving the freshness of cut flowers and vegetables
IN Suzuki, Tadayuki; Kamei, Masatoshi; Hayashi, Masaharu; Kurita, Kazuhiko
PA Kao Corporation, Japan
SO PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM A01N003-02
CC 5-3 (Agrochemical Bioregulators)
Section cross-reference(s): 17
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000005946	A1	20000210	WO 1999-JP4080	19990729 <--
	W: US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	JP 2000044401	A2	20000215	JP 1998-214106	19980729 <--
	JP 2000169302	A2	20000620	JP 1998-349965	19981209 <--
	JP 2000103701	A2	20000411	JP 1999-215861	19990729 <--
	EP 1101402	A1	20010523	EP 1999-933160	19990729 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRAI	JP 1998-214105	A	19980729 <--		
	JP 1998-214106	A	19980729 <--		
	JP 1998-349965	A	19981209 <--		
	WO 1999-JP4080	W	19990729 <--		

AB Highly safe agents for preserving the freshness of harvested plants such as cut flowers and vegetables comprise a sugar- or sugar alc.-type surfactant together with .gtoreq.1 substance selected from among sugars, plant hormones, antioxidants, colloidal particle flocculating/pptg. agents, and microbicides and preservatives, preferably at a sp. wt. ratio. Thus, cut flowers (carnation, chrysanthemum, and rose) treated with an agent contg. 100 ppm sucrose fatty acid ester and 2.0% glucose lasted 10-12 days, whereas flowers treated with 2.0% glucose alone lasted 5-6 days and flowers in water lasted 3-5 days.
ST preservative cut flower vegetable sugar surfactant
IT **Cut flower preservation**
(agents contg. sugar- or sugar alc.-type surfactants and other substances for)
IT Precipitation (chemical)
(agents; preservatives for cut flowers and vegetables contg. sugar- or sugar alc.-type surfactants and other substances)
IT Glycosides
RL: BAC (Biological activity or effector, except adverse); BSU (Biological

study, unclassified); BUU (Biological use, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(alkyl polyglycosides; preservatives for cut flowers and vegetables contg. sugar- or sugar alc.-type surfactants and other substances)

IT Hormones, plant
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(brassinosteroids; preservatives for cut flowers and vegetables contg. sugar- or sugar alc.-type surfactants and other substances)

IT Food preservatives
(contg. sugar- or sugar alc.-type surfactants and other substances)

IT **Preservatives**
(contg. sugar- or sugar alc.-type surfactants and other substances for keeping harvested plants fresh)

IT Alditols
Fatty acids, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(esters; preservatives for cut flowers and vegetables contg. sugar- or sugar alc.-type surfactants and other substances)

IT Amides, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(fatty; preservatives for cut flowers and vegetables contg. sugar- or sugar alc.-type surfactants and other substances)

IT Oligosaccharides, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(fructose-lactose-contg.; preservatives for cut flowers and vegetables contg. sugar- or sugar alc.-type surfactants and other substances)

IT Antimicrobial agents
Antioxidants
Carnation (Dianthus)
Chinese cabbage
Chrysanthemum
Rose (Rosa)
Spinach (Spinacia oleracea)
Surfactants
Vegetable
(preservatives for cut flowers and vegetables contg. sugar- or sugar alc.-type surfactants and other substances)

IT Auxins
Carbohydrates, biological studies
Cytokinins
Gibberellins
Hormones, plant
Polysaccharides, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(preservatives for cut flowers and vegetables contg. sugar- or sugar alc.-type surfactants and other substances)

IT Carbohydrates, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(sugar esters; preservatives for cut flowers and vegetables contg. sugar- or sugar alc.-type surfactants and other substances)

IT Amides, biological studies

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(sugar; preservatives for cut flowers and vegetables contg. sugar- or sugar alc.-type surfactants and other substances)

IT **9012-76-4, Chitosan** 10043-01-3, Aluminum sulfate 10043-52-4, Calcium chloride, uses 147014-67-3, Kurifloc LC 541
RL: NUU (Other use, unclassified); USES (Uses)
(pptn. agent; preservatives for cut flowers and vegetables contg. sugar- or sugar alc.-type surfactants and other substances)

IT 50-70-4, Sorbitol, biological studies 50-99-7, D-Glucose, biological studies 57-48-7, Fructose, biological studies 57-50-1, Sucrose, biological studies 57-50-1D, Sucrose, fatty acid esters 59-23-4, Galactose, biological studies 62-57-7, Aminoisobutyric acid 77-06-5, Gibberellic acid 94-75-7, 2,4-D, biological studies **99-20-7, Trehalose** 148-24-3, 8-Hydroxyquinoline, biological studies 525-79-1, Kinetin 1330-43-4, Sodium tetraborate 1338-39-2, Rheodol SP-L 10 7173-51-5, Didecyldimethylammonium chloride 13073-35-3, Ethionine 23149-52-2, Silver thiosulfate 37266-93-6, DK Ester SL 18A 49669-74-1 73904-70-8, Proxel 257285-60-2, Maidooru 10
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(preservatives for cut flowers and vegetables contg. sugar- or sugar alc.-type surfactants and other substances)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Abbott Laboratories; US 5500403 A HCAPLUS
(2) Abbott Laboratories; AU 699897 B HCAPLUS
(3) Abbott Laboratories; EP 765114 A1 HCAPLUS
(4) Abbott Laboratories; WO 9534199 A1 HCAPLUS
(5) Abbott Laboratories; KR 97703697 A
(6) Abbott Laboratories; JP 10501553 A 1998
(7) Asahi Optical Co Ltd; JP 07187902 A 1995 HCAPLUS
(8) British Technology Group Ltd; ES 2113647 T3 HCAPLUS
(9) British Technology Group Ltd; AU 693092 B HCAPLUS
(10) British Technology Group Ltd; DE 69408664 A1
(11) British Technology Group Ltd; EP 696167 A1 HCAPLUS
(12) British Technology Group Ltd; WO 9424857 A1 HCAPLUS
(13) British Technology Group Ltd; JP 08509375 A 1996
(14) Kurorera Kogyo K K; JP 49120781 A 1974
(15) Riken Vitamin Oil Co Ltd; JP 5081856 A 1975
(16) T Hasegawa Co Ltd; JP 06336401 A 1994 HCAPLUS

IT **9012-76-4, Chitosan**
RL: NUU (Other use, unclassified); USES (Uses)
(pptn. agent; preservatives for cut flowers and vegetables contg. sugar- or sugar alc.-type surfactants and other substances)

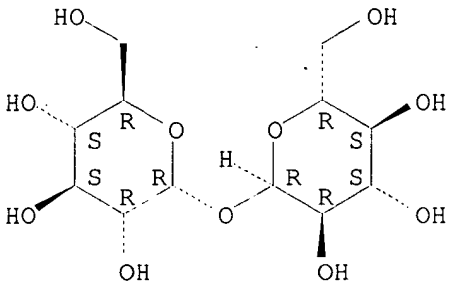
RN 9012-76-4 HCAPLUS
CN Chitosan (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **99-20-7, Trehalose**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(preservatives for cut flowers and vegetables contg. sugar- or sugar alc.-type surfactants and other substances)

RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L72 ANSWER 10 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2000:79265 HCAPLUS
DN 132:119565
TI A method for manufacturing a dry enzymic analysis element with an improved preservative stability
IN Makino, Yasuhiko; Muratani, Koji
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G01N033-52
ICS C12Q001-26; C12Q001-28; C12Q001-32; C12Q001-44; C12Q001-48; G01N033-92; G01N033-70
CC **9-2 (Biochemical Methods)**
FAN.CNT 1

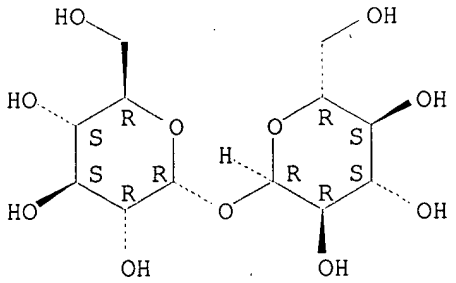
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2000035427	A2	20000202	JP 1998-203791	19980717 <--
PRAI JP 1998-203791		19980717 <--		

AB A method is described for manufg. a dry anal. element contg. an enzyme with an improved preservative stability for measuring a constituent in a body fluid (e.g., blood) or an other liq. sample. The dry anal. element comprises at least a color-developing reagent layer and a development layer formed on a transparent support material. An aq. soln. contg. at least enzyme(s) and disaccharide is supplied to the developing layer, and dried by blowing a warm air at about 30-70.degree.C. An improved preservative stability was obsd. by including a disaccharide selected from **trehalose**, sucrose, and maltose in the developing layer of the dry anal. element for measuring the total cholesterol using peroxidase, cholesterol esterase, and cholesterol oxidase. An improved preservative stability was also obsd. by including sucrose in the developing layer of the dry anal. element for measuring creatine kinase activity using hexokinase, glucose-6-phosphate dehydrogenase, and diaphorase.

ST dry enzymic analysis element preservation disaccharide
IT Analysis
(enzymic anal.; method for manufg. dry enzymic anal. element with improved preservative stability)
IT Blood analysis
Body fluid
Drying
Preservation
Reflection spectroscopy
Stabilizing agents
(method for manufg. dry enzymic anal. element with improved preservative stability)
IT Disaccharides
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(method for manufg. dry enzymic anal. element with improved

preservative stability)
IT Gelatins, uses
RL: DEV (Device component use); USES (Uses)
(method for manufg. dry enzymic anal. element with improved preservative stability)
IT Polyesters, uses
RL: DEV (Device component use); USES (Uses)
(method for manufg. dry enzymic anal. element with improved preservative stability)
IT 9001-15-4, Kinase (phosphorylating), creatine
RL: ANT (Analyte); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(method for manufg. dry enzymic anal. element with improved preservative stability)
IT 67-07-2, Creatine phosphate 298-83-9 9001-40-5, Glucose-6-phosphate dehydrogenase 9001-51-8, Hexokinase 9003-99-0, Peroxidase 9026-00-0, Esterase, cholesterol 9028-76-6, Oxidase, cholesterol 13746-66-2, Potassium ferricyanide 37340-89-9, Diaphorase 94153-57-8
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(method for manufg. dry enzymic anal. element with improved preservative stability)
IT 57-50-1, Sucrose, analysis 69-79-4, Maltose **99-20-7**, **Trehalose**
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(method for manufg. dry enzymic anal. element with improved preservative stability)
IT 25038-59-9, Polyethylene terephthalate, uses
RL: DEV (Device component use); USES (Uses)
(method for manufg. dry enzymic anal. element with improved preservative stability)
IT 13463-67-7, Titanium oxide, uses
RL: NUU (Other use, unclassified); USES (Uses)
(method for manufg. dry enzymic anal. element with improved preservative stability)
IT 57-88-5, Cholesterol, analysis
RL: ANT (Analyte); ANST (Analytical study)
(total; method for manufg. dry enzymic anal. element with improved preservative stability)
IT **99-20-7, Trehalose**
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(method for manufg. dry enzymic anal. element with improved preservative stability)
RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

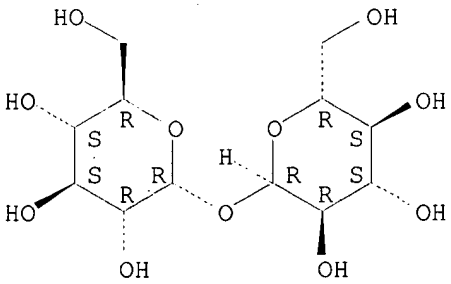


L72 ANSWER 11 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
AN **2000:35902** HCAPLUS

DN **132:339192**
TI Development of a freeze-dried formulation of insulin-loaded **chitosan** nanoparticles intended for nasal administration
AU Fernandez-Urrusuno, R.; Romani, D.; Calvo, P.; Vila-Jato, J. L.; Alonso, M. J.
CS Department of Pharmaceutical Technology, School of Pharmacy, Santiago de Compostela, 15706, Spain
SO S.T.P. Pharma Sciences (**1999**), 9(5), 429-436
CODEN: STSSE5; ISSN: 1157-1489
PB Editions de Sante
DT Journal
LA English
CC 63-6 (Pharmaceuticals)
AB The aim of this work was to develop a freeze-dried formulation of insulin-loaded **chitosan** nanoparticles and to assess their efficacy for reducing the plasma glucose levels after nasal administration. **Chitosan** nanoparticles were prepd. by ionotropic gelation of **chitosan** with tripolyphosphate anions and then characterized in vitro (size, zeta potential, insulin loading and release) and in vivo (plasma glucose levels). The nanoparticles were also freeze-dried in the presence of various cryoprotective agents and then characterized upon reconstitution in water. Fresh **chitosan** nanoparticles displayed a pos. charge and a high insulin loading (up to 55%). In vitro release studies showed that insulin was totally released from the nanoparticles in <1 h. Upon freeze-drying in the presence of **trehalose** or sucrose, the nanoparticles were freely reconstituted in water without a significant change in their size, zeta potential, insulin loading and release rate. The in vivo evaluation in conscious rabbits revealed that insulin-assocd. nanoparticles are able to reduce the plasma glucose levels to a greater extent than insulin **chitosan** solns. Furthermore, the in vivo efficacy of the reconstituted insulin-loaded nanoparticles administered intranasally was fully maintained. Consequently, freeze-dried **chitosan** nanoparticles can be proposed as useful vehicles for increasing the nasal absorption of insulin.
ST insulin **chitosan** nanoparticle nasal freeze dried
IT Dissolution rate
Drug bioavailability
Freeze drying
Gelation
Particle size distribution
Zeta potential
(freeze-dried formulation of insulin-loaded **chitosan** nanoparticles for nasal administration)
IT Drug delivery systems
(nanoparticles; freeze-dried formulation of insulin-loaded **chitosan** nanoparticles for nasal administration)
IT Drug delivery systems
(nasal; freeze-dried formulation of insulin-loaded **chitosan** nanoparticles for nasal administration)
IT 9004-10-8, Insulin, biological studies
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(freeze-dried formulation of insulin-loaded **chitosan** nanoparticles for nasal administration)
IT 57-50-1, Sucrose, processes **99-20-7, Trehalose**
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(freeze-dried formulation of insulin-loaded **chitosan** nanoparticles for nasal administration)
IT **9012-76-4, Chitosan** 14127-68-5, Tripolyphosphate
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(freeze-dried formulation of insulin-loaded **chitosan**

nanoparticles for nasal administration)
RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Almeida, A; J Pharm Pharmacol 1993, V45, P198 HCAPLUS
(2) Alpar, H; J Drug Targeting 1994, V2, P147 MEDLINE
(3) Artursson, P; Pharm Res 1994, V11, P1358 HCAPLUS
(4) Aspden, T; Eur J Pharm Sci 1996, V4, P23 HCAPLUS
(5) Calvo, P; J Appl Pol Sci 1997, V63, P125 HCAPLUS
(6) Calvo, P; Pharm Res 1997, V14, P1431 HCAPLUS
(7) Calvo, P; Proceed 2nd World Meeting APGI/APV 1998, P1111
(8) Dondeti, P; Pharmazie 1994, V49, P505 HCAPLUS
(9) Fernandez-Urrusuno, R; Pharm Res 1999, V16, P1576 HCAPLUS
(10) Her, L; Pharm Res 1994, V11, P54 HCAPLUS
(11) Illum, L; Pharm Res 1994, V11, P1186 HCAPLUS
(12) Illum, L; Pharm Res 1998, V15, P1326 HCAPLUS
(13) Jin, C; Trans Tianjin Univ 1996, V2, P25
(14) Lehr, C; Int J Pharm 1992, V78, P43 HCAPLUS
(15) Li, Y; STP Pharma Sci 1991, V1, P363 HCAPLUS
(16) Lin, S; Chem Pharm Bull 1992, V40, P2491 HCAPLUS
(17) Luessen, H; Pharm Res 1996, V13, P1668 HCAPLUS
(18) Mayor, S; Int J Pharm 1997, V149, P123 HCAPLUS
(19) Ohya, Y; J M S Pure Appl Chem 1994, VA31, P629 HCAPLUS
(20) Remunan-Lopez, C; Eur J Pharm Biopharm 1998, V45, P49 HCAPLUS
(21) Tobio, M; Pharm Res 1998, V15, P274
(22) Uchegbu, I; J Pharm Pharmacol 1998, V50, P453 HCAPLUS
IT **99-20-7, Trehalose**
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(freeze-dried formulation of insulin-loaded **chitosan** nanoparticles for nasal administration)
RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



IT **9012-76-4, Chitosan**
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(freeze-dried formulation of insulin-loaded **chitosan** nanoparticles for nasal administration)
RN 9012-76-4 HCAPLUS
CN Chitosan (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L72 ANSWER 12 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 1999:778625 HCAPLUS
DN 132:177426
TI Combined effects of **trehalose** and cations on the thermal resistance of .beta.-galactosidase in freeze-dried systems
AU Mazzobre, M. F.; Del Pilar Buera, M.
CS Facultad de Ciencias Exactas y Naturales, Departamento de Industrias, Ciudad Universitaria, Universidad de Buenos Aires, Buenos Aires, 1428,

Argent.
SO Biochimica et Biophysica Acta (**1999**), 1473(2-3), 337-344
CODEN: BBACAQ; ISSN: 0006-3002
PB Elsevier Science B.V.
DT Journal
LA English
CC 7-8 (Enzymes)
Section cross-reference(s): **9**
AB The purpose of this study was to investigate the combined effects of **trehalose** and cations on the preservation of .beta.-galactosidase in freeze-dried systems and their relationship to phys. properties. Differential scanning calorimetry was employed to measure the glass transition temp. (Tg) and the endothermal peak area, related to the amt. of cryst. **trehalose** dihydrate present in the samples. In systems in which the **trehalose** matrix was humidified to conditions which allowed a high proportion of **trehalose** to crystallize, the enzyme was rapidly inactivated upon heating at 70.degree.. In these conditions the addn. of CsCl, NaCl and particularly KCl or MgCl2, improved the enzyme stability with respect to that obsd. in matrixes contg. only **trehalose**. For a given moisture content, addn. of salts produced very little change on the glass transition temp.; therefore the protective effect could not be attributed to a higher Tg value. The crystn. of **trehalose** dihydrate in the humidified samples was delayed in the **trehalose**/salt systems (principally in the presence of Mg2+) and a parallel improvement of enzyme stability was obsd.
ST **trehalose** salt freeze drying enzyme stability; beta galactosidase preservation freeze drying **trehalose**; thermal stability protein freeze drying **trehalose**
IT **Freeze drying**
Hydration, chemical
Preservation
Thermal stability
(combined effects of **trehalose** and cations on thermal resistance of .beta.-galactosidase in freeze-dried systems)
IT Enzymes, properties
Proteins, general, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(combined effects of **trehalose** and cations on thermal resistance of .beta.-galactosidase in freeze-dried systems)
IT **99-20-7, Trehalose** 7447-40-7, Potassium chloride (KCl), properties 7647-14-5, Sodium chloride, properties 7647-17-8, Cesium chloride (CsCl), properties 7786-30-3, Magnesium chloride (MgCl2), properties
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(combined effects of **trehalose** and cations on thermal resistance of .beta.-galactosidase in freeze-dried systems)
IT 9031-11-2, .beta.-Galactosidase
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(combined effects of **trehalose** and cations on thermal resistance of .beta.-galactosidase in freeze-dried systems)
RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Aldous, B; Cryo-Lett 1995, V16, P181 HCAPLUS
(2) Angyal, S; Aust J Chem 1972, V25, P1957 HCAPLUS
(3) Anon; Handbook of Chemistry and Physics, 67th edn 1986-1987
(4) Anon; Merck Index, 12th edn
(5) Buera, M; Food Res Int 1995, V28, P359 HCAPLUS
(6) Cardona, S; J Food Sci 1997, V62, P105 HCAPLUS
(7) Carpenter, J; Arch Biochem Biophys 1986, V250, P505 HCAPLUS
(8) Carpenter, J; Biochim Biophys Acta 1987, V923, P109 HCAPLUS

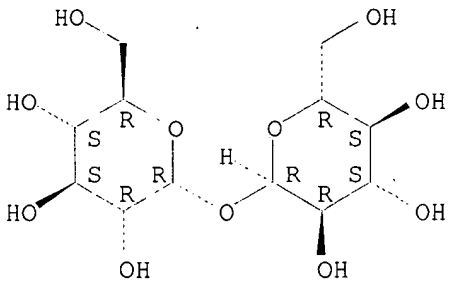
(9) Carpenter, J; Cryobiology 1988, V25, P459 HCAPLUS
(10) Chan, H; Pharm Res 1996, V13, P756 HCAPLUS
(11) Colaco, C; Bio/Technology 1992, V10, P1007 HCAPLUS
(12) Cook, W; Carbohydr Res 1973, V31, P265 HCAPLUS
(13) Crowe, J; Annu Rev Physiol 1998, V60, P73 HCAPLUS
(14) Crowe, J; Cryobiology 1994, V31, P355 MEDLINE
(15) Crowe, L; Biophys J 1996, V71, P2087 HCAPLUS
(16) Crowe, L; Science 1984, V233, P701
(17) Dickson, R; J Bacteriol 1979, V137, P51 HCAPLUS
(18) Green, J; J Phys Chem 1989, V93, P2880 HCAPLUS
(19) Guy, E; J Dairy Sci 1978, V61, P147 HCAPLUS
(20) Leslie, S; Appl Environ Microbiol 1995, V61, P3592 HCAPLUS
(21) Mazzobre, M; Lebensm-Wiss-Technol 1997, V30, P324 HCAPLUS
(22) Miller, D; Pharm Res 1997, V14, P578 HCAPLUS
(23) Miller, D; Pharm Res 1998, V15, P1215 HCAPLUS
(24) Morel-Desrosier, N; J Chem Soc Faraday Trans 1991, V87, P2173
(25) Palumbo, M; J Food Sci 1995, V60, P117
(26) Rongere, P; J Chem Soc Faraday Trans 1995, V91, P2771 HCAPLUS
(27) Roos, Y; Biotechnol Prog 1991, V7, P49 HCAPLUS
(28) Roos, Y; Carbohydr Res 1993, V238, P39 HCAPLUS
(29) Roos, Y; J Food Sci 1991, V56, P1676 HCAPLUS
(30) Schebor, C; Biotechnol Prog 1997, V13, P857 HCAPLUS
(31) Shafizadeh, F; J Org Chem 1973, V28, P3710
(32) Shamblin, S; J Therm Anal 1996, V47, P1567 HCAPLUS
(33) Sussich, F; J Am Chem Soc 1998, V120, P7893 HCAPLUS
(34) Suzuki, T; J Chem Eng Jpn 1997, V30, P609 HCAPLUS
(35) Tan, C; Cryobiology 1995, V32, P60
(36) Taylor, L; J Pharm Sci 1998, V87, P347 HCAPLUS
(37) Voget, C; Lebensm-Wiss-Technol 1994, V27, P324 HCAPLUS
(38) Whitaker, J; Food Preservation by Moisture Control 1995, P255 HCAPLUS

IT **99-20-7, Trehalose**
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(combined effects of **trehalose** and cations on thermal resistance of .beta.-galactosidase in freeze-dried systems)

RN 99-20-7 HCAPLUS

CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L72 ANSWER 13 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1999:702928 HCAPLUS

DN 132:32848

TI Preservation of frozen yeast cells by **trehalose**

AU Diniz-Mendes, L.; Bernardes, E.; de Araujo, P. S.; Panek, A. D.; Paschoalin, V. M. F.

CS Departamento de Bioquimica, Instituto de Quimica, Universidade Federal do Rio de Janeiro, Rio de Janeiro, 21949-900, Brazil

SO Biotechnology and Bioengineering (**1999**), 65(5), 572-578
CODEN: BIBIAU; ISSN: 0006-3592

PB John Wiley & Sons, Inc.

DT Journal
LA English
CC **9-11 (Biochemical Methods)**
AB Two different methods commonly used to preserve intact yeast cells-freezing and freeze-drying-were compared. Different yeast cells submitted to these treatments were stored for 28 days and cell viability assessed during this period. Intact yeast cells showed to be less tolerant to freeze-drying than to freezing. The rate of survival for both treatments could be enhanced by exogenous **trehalose** (10%) added during freezing and freeze-drying treatments or by a combination of two procedures: a pre-exposure of cells to 40.degree.C for 60 min and addn. of **trehalose**. A max. survival level of 71.5 .+-. 6.3% after freezing could be achieved at the end of a storage period of 28 days, whereas only 25.0 .+-. 1.4% showed the ability to tolerate freeze-drying treatment, if both low-temp. treatments were preceded by a heat exposure and addn. of **trehalose** to yeast cells. Increased survival ability was also obtained when the pre-exposure treatment of yeast cells was performed at 10.degree.C for 3 h and **trehalose** was added: these treatments enhanced cell survival following freezing from 20.5 .+-. 7.7% to 60.0 .+-. 3.5%. Although both mild cold and heat shock treatments could enhance cell tolerance to low temp., only the heat treatment was able to increase the accumulation of intracellular **trehalose** whereas, during cold shock exposure, the intracellular amt. of **trehalose** remained unaltered. Intracellular **trehalose** levels seemed not to be the only factor contributing to cell tolerance against freezing and freeze-drying treatments; however, the protection that this sugar confers to cells can be exerted only if it is to be found on both sides of the plasma membrane.
ST cryopreservation yeast **trehalose** cryoprotectant; preservation yeast freezing freeze drying **trehalose** cryoprotectant
IT Temperature effects, biological
(cold, effect of mild cold shock; preservation of frozen yeast cells by **trehalose**)
IT Temperature effects, biological
(heat, effect of mild heat shock; preservation of frozen yeast cells by **trehalose**)
IT **Cryopreservation**
Cryoprotectants
Freeze drying
Freezing
Saccharomyces cerevisiae
(preservation of frozen yeast cells by **trehalose**)
IT Biological transport
(uptake, of **trehalose**; preservation of frozen yeast cells by **trehalose**)
IT **99-20-7, Trehalose**
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(preservation of frozen yeast cells by **trehalose**)
RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Bell, W; Eur J Biochem 1992, V209, P951 HCAPLUS
(2) Carpenter, J; Biochim Biophys Acta 1987, V923, P109 HCAPLUS
(3) Coutinho, C; J Biotechnol 1988, V7, P23 HCAPLUS
(4) Crowe, J; Cryobiology 1990, V27, P219 HCAPLUS
(5) Crowe, L; Biochim Biophys Acta 1986, V861, P131 HCAPLUS
(6) Hottiger, T; FEBS Lett 1987, V220, P113 HCAPLUS
(7) Kaul, S; Cell Mol Biol 1992, V38, P553 HCAPLUS
(8) Komatsu, Y; Ferment Res Inst 1987, V68, P27
(9) Leslie, S; Appl Environ Microbiol 1995, V61, P3592 HCAPLUS
(10) Lindquist, S; Annu Rev Genet 1988, V22, P631 HCAPLUS
(11) Obuchi, K; Cryo-Lett 1990, V11, P287

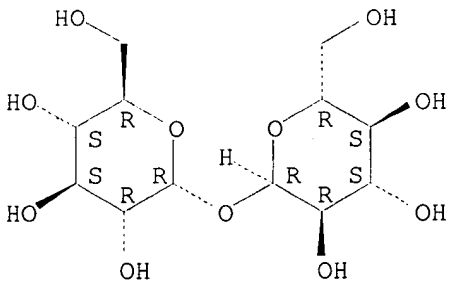
(12) Pellerin-Mendes, C; Cryobiology 1997, V35, P173 HCAPLUS
(13) Prestrelski, S; Arch Biochem Biophys 1993, V303, P465 HCAPLUS
(14) Sanchez, Y; EMBO J 1992, V11, P2357 HCAPLUS
(15) Stambuk, B; Biochim Biophys Acta 1998, V1379, P118 HCAPLUS
(16) Sussman, A; Nature 1959, V130, P1343 HCAPLUS
(17) Tatchell, K; Nature 1984, V309, P523 HCAPLUS
(18) Tourinho dos Santos, C; Braz J Med Biol Res 1994, V27, P627 HCAPLUS
(19) Van Laere, A; FEMS Microbiol Rev 1989, V63, P201 HCAPLUS
(20) Zahringer, H; FEBS Lett 1997, V412, P615 MEDLINE

IT **99-20-7, Trehalose**
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(preservation of frozen yeast cells by **trehalose**)

RN 99-20-7 HCAPLUS

CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L72 ANSWER 14 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1999:581741 HCAPLUS

DN 132:148676

TI Freeze-dried formulation for direct 99mTc-labeling ior-egf/r3 MAb. Additives, biodistribution, and stability

AU Morales, A. A. M.; Nunez-Gandolff, G.; Perez, N. P.; Veliz, B. C.; Caballero-Torres, I.; Duconge, J.; Fernandez, E.; Crespo, F. Z.; Veloso, A.; Iznaga-Escobar, N.

CS Center of Molecular Immunology, Havana, Cuba

SO Nuclear Medicine and Biology (**1999**), 26(6), 717-723
CODEN: NMBIEO; ISSN: 0969-8051

PB Elsevier Science Inc.

DT Journal

LA English

CC **9-10 (Biochemical Methods)**

AB Monoclonal antibodies (MAbs) were useful for immunoscintigraphic applications in clin. diagnosis since they were introduced in nuclear medicine practice. The MAb ior egf/r3 developed at the Center of Mol. Immunol. (Havana, Cuba) is a murine antibody that recognizes the human epidermal growth factor receptor (EGF-R) and was used widely in the radioimmunodiagnosis of tumors of epithelial origin. Based on the direct Schwarz method, the present report describes the prepn. of a freeze-dried formulation for radiolabeling the MAb ior egf/r3 with 99mTc for immunoscintigraphic applications. Radiolabeling efficiency, effects on immunoreactivity, biodistribution, pharmacokinetic, and stability of the formulation are reported. The study demonstrated that the freeze-dried formulation can be labeled with 99mTc at high yield. The resulting 99mTc-labeled ior egf/r3 MAb can be used to visualize in vivo human tumors of epithelial origin by immunoscintigraphy studies. The kit does not need any other addn. or purifn. at the time of tagging other than the requisite amt. of pertechnetate (40-50 mCi). Because the contents of the kit are

lyophilized, no special storage or transportation is required.

ST freeze dried technetium 99m labeled ioregfr3 monoclonal antibody immunoscintigraphy; EGFR lyophilization technetium 99m labeled ioregfr3 monoclonal antibody immunoscintigraphy; epidermal growth factor receptor ioregfr3 antibody lyophilization immunoscintigraphy

IT **Freeze drying**
(EGF-R detected by lyophilized 99mTc-labeling ior-egf/r3 MAb using immunoscintigraphy)

IT Epidermal growth factor receptors
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(EGF-R detected by lyophilized 99mTc-labeling ior-egf/r3 MAb using immunoscintigraphy)

IT Scintigraphy
(immunoscintigraphy; lyophilized 99mTc-labeling ior-egf/r3 MAb for immunoscintigraphy)

IT Brain
Intestine
Kidney
Liver
Lung
Pancreas
Spleen
Stomach
(lyophilized 99mTc-labeling ior-egf/r3 MAb for immunoscintigraphy, biodistribution)

IT Antibodies
RL: BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(monoclonal; lyophilized 99mTc-labeling ior-egf/r3 MAb for immunoscintigraphy)

IT Physiological saline solutions
(phosphate-buffered; additives to lyophilized 99mTc-labeling ior-egf/r3 MAb for immunoscintigraphy)

IT Colloids
Preservatives
(preservatives effect on stability of lyophilized 99mTc-labeling ior-egf/r3 MAb for immunoscintigraphy)

IT 50-70-4, D-Glucitol, analysis 50-99-7, Glucose, analysis 57-50-1, analysis 69-65-8, Mannitol 87-89-8, Inositol **99-20-7**, **Trehalose**
RL: ARU (Analytical role, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(additives to lyophilized 99mTc-labeling ior-egf/r3 MAb for immunoscintigraphy)

IT 14133-76-7, Technetium 99, analysis
RL: ARU (Analytical role, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(metastable; EGF-R detected by lyophilized 99mTc-labeling ior-egf/r3 MAb using immunoscintigraphy)

IT 67-64-1, Acetone, analysis
RL: ARU (Analytical role, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(preservatives effect on stability of lyophilized 99mTc-labeling ior-egf/r3 MAb for immunoscintigraphy)

RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

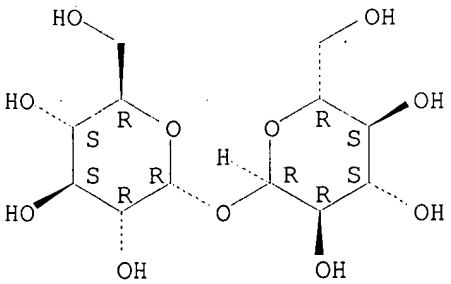
(1) Bale, W; Cancer Res 1980, V40, P2965 HCAPLUS
(2) Carpenter, J; Cryobiology 1988, V25, P459 HCAPLUS
(3) Cohen, S; J Biol Chem 1982, V257, P1523 HCAPLUS
(4) Cohen, S; Proc Natl Acad Sci USA 1982, V79, P6237 HCAPLUS
(5) Colcher, D; Cancer Res 1987, V47, P1185 MEDLINE

(6) Crowe, J; Biochem J 1987, V242, P2
(7) Crowe, J; Cryobiology 1990, V27, P219 HCAPLUS
(8) Divgi, C; J Natl Cancer Inst 1991, V83, P97 MEDLINE
(9) Draber, P; J Immunol Methods 1995, V181, P37 HCAPLUS
(10) Ellman, G; Arch Bioch Biophys 1959, V82, P70 HCAPLUS
(11) Fernandez, A; Interferon y Biotecnologia 1989, V6, P289
(12) Fernandez, A; J Cell Biochem 1992, V49, P157 HCAPLUS
(13) Goldenberg, D; Cancer Res 1990, V50, P909
(14) Goldenberg, D; Semin Nucl Med 1989, V19, P262 MEDLINE
(15) Greenwood, F; Biochem J 1963, V89, P114 MEDLINE
(16) Israeli, E; Cryobiology 1993, V30, P519 HCAPLUS
(17) Iznaga-Escobar, N; Nucl Med Biol 1996, V23, P635 MEDLINE
(18) Iznaga-Escobar, N; Nucl Med Biol 1996, V23, P641 MEDLINE
(19) Jennings, T; IVD Technology 1997, VJanuary/February, P38
(20) Lindmo, T; J Immunol Methods 1984, V72, P77 HCAPLUS
(21) Macias, A; Interferon y Biotecnologia 1985, V2, P115
(22) Mather, S; J Nucl Med 1990, V31, P692 HCAPLUS
(23) Morales, A; Nucl Med Biol 1998, V25, P25 HCAPLUS
(24) Morales, A; Nucl Med Biol 1999, V26, P275
(25) Morrison, R; Int J Nucl Med Biol 1984, V11, P184 MEDLINE
(26) Murray, J; J Nucl Med 1987, V28, P25 MEDLINE
(27) Neal, D; Lancet 1985, V1, P346
(28) Perez, R; Breast Cancer Res Treat 1984, V4, P189 HCAPLUS
(29) Pikal, M; Biopharm 1990, V3, P18 HCAPLUS
(30) Reilly, R; Nucl Med Commun 1993, V14, P347 MEDLINE
(31) Rios, M; Anticancer Res 1992, V12, P205 MEDLINE
(32) Rodriguez, N; Rev Esp Med Nucl 1995, V14, P285
(33) Roser, B; Biopharm 1991, V5, P47
(34) Rudolph, A; Cryobiology 1990, V27, P585 HCAPLUS
(35) Schwarz, A; J Nucl Med 1987, V28, P721
(36) Singh, A; Nucl Med Biol 1994, V21, P277 HCAPLUS
(37) Snelling, L; Hybridoma 1995, V14, P111 MEDLINE
(38) Thrall, J; J Nucl Med 1976, V19, P796
(39) Veale, D; Br J Cancer 1987, V55, P513 MEDLINE

IT **99-20-7, Trehalose**
RL: ARU (Analytical role, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(additives to lyophilized 99mTc-labeling ior-egf/r3 MAb for immunoscintigraphy)

RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L72 ANSWER 15 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
AN **1999:462706** HCAPLUS
DN **131:115668**
TI Keeping freshness of flowers and vegetables using **trehalose** and **chitosan**
IN Inoue, Tadashi; Inoue, Takeshi

PA Okayama Oyo Kagaku Y. K., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM A23B007-153
ICS A01G007-00; A01N063-00; C08L005-08
CC 17-4 (Food and Feed Chemistry)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11196765	A2	19990727	JP 1998-8604	19980120 <--
PRAI	JP 1998-8604		19980120 <--		

AB Freshness of plants, e.g. flowers, vegetables, is kept by soaking, coating, or spraying the plants with solns. contg. 1-5% **trehalose**, enzymically prepd. from maltose, and 0.1-0.0001% water-sol. **chitosan** showing pH 6.5-7.6. **Trehalose** and **chitosan** control rate of flowering and formation of floral axis. Cut roses were soaked in an aq. soln. (pH 7) contg. 5% **trehalose** and 0.01% water-sol. low-mol.-wt. **chitosan** to be significantly prevented from wilting and to flower slowly.

ST plant freshness preservation **trehalose chitosan** soln; flower vegetable freshness preservation **trehalose chitosan**

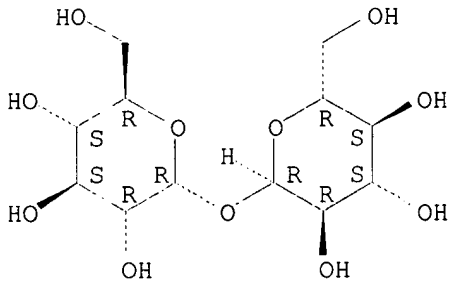
IT **Cut flower preservation**
Flower
Food preservation
Food preservatives
Plant (Embryophyta)
Vegetable
(keeping freshness of flowers and vegetables using solns. of **trehalose** and **chitosan**)

IT **99-20-7, Trehalose 9012-76-4, Chitosan**
RL: AGR (Agricultural use); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(keeping freshness of flowers and vegetables using solns. of **trehalose** and **chitosan**)

IT **99-20-7, Trehalose 9012-76-4, Chitosan**
RL: AGR (Agricultural use); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(keeping freshness of flowers and vegetables using solns. of **trehalose** and **chitosan**)

RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

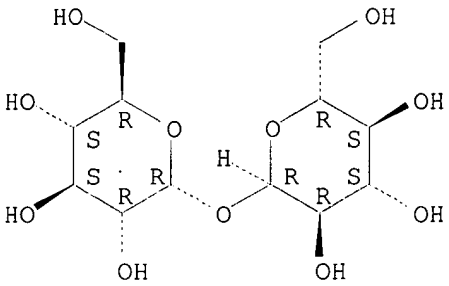


RN 9012-76-4 HCAPLUS
CN Chitosan (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L72 ANSWER 16 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 1999:286756 HCAPLUS
DN 131:70761
TI A stabilized reaction mixture for in vitro translation of mRNA
AU Shaloiko, L. A.; Gorokhovhtskii, A. Yu.; Maksimov, E. E.; Alakhov, Yu. B.
CS Pushchino Branch, Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Pushchino, 142292, Russia
SO Bioorganicheskaya Khimiya (**1998**), 24(7), 539-543
CODEN: BIKHD7; ISSN: 0132-3423
PB MAIK Nauka
DT Journal
LA Russian
CC **9-11 (Biochemical Methods)**
AB Here we describe a method for obtaining a ready-to-use stabilized reaction mixt. for in vitro translation of mRNA. We also demonstrate the stabilization of a complete translation mixt. contg. wheat germ ext., amino acids, ATP, GTP, creatine phosphate, creatine kinase, and the reaction buffer by lyophilization in the presence of various sugars. The greatest stabilizing effect is achieved by supplementing the mixt. with 10% (mass/vol.) **trehalose**, which is also a unique translation activator, enhancing the translation of various mRNAs. A lyophilized complete translation mixt. contg. **trehalose** can be stored at 4-80C for several months without losing its activity. The mixt. can be easily reconstituted by adding an aq. mRNA soln. and retains the potential for reproducible functioning. This allows the employment of such a cell-free translation system for anal. screening of a broad spectrum of compds. inhibiting translation at various stages.
ST translation mRNA in vitro reaction mixt lyophilization preservation
IT **Freeze drying**
Preservation
Storage
Translation, genetic
(a stabilized reaction mixt. for in vitro translation of mRNA)
IT mRNA
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(a stabilized reaction mixt. for in vitro translation of mRNA)
IT Amino acids, biological studies
Carbohydrates, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(a stabilized reaction mixt. for in vitro translation of mRNA)
IT Wheat
(germ, ext.; a stabilized reaction mixt. for in vitro translation of mRNA)
IT 56-65-5, 5'-ATP, biological studies 67-07-2, Creatine phosphate
86-01-1, 5'-GTP **99-20-7**, **Trehalose** 9001-15-4,
Creatine kinase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(a stabilized reaction mixt. for in vitro translation of mRNA)
IT **99-20-7, Trehalose**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(a stabilized reaction mixt. for in vitro translation of mRNA)
RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L72 ANSWER 17 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 1998:676219 HCAPLUS
DN 130:11753
TI Protein inactivation in amorphous sucrose and **trehalose** matrixes: effects of phase separation and crystallization
AU Sun, Wendell Q.; Davidson, Paul
CS School of Biological Sciences, National University of Singapore, Singapore, 119260, Singapore
SO Biochimica et Biophysica Acta (**1998**), 1425(1), 235-244
CODEN: BBACAQ; ISSN: 0006-3002
PB Elsevier Science B.V.
DT Journal
LA English
CC 6-3 (General Biochemistry)
Section cross-reference(s): 7, **9**
AB **Trehalose** is the most effective carbohydrate in preserving the structure and function of biol. systems during dehydration and subsequent storage. We have studied the kinetics of protein inactivation in amorphous glucose/sucrose (1:10, wt./wt.) and glucose/**trehalose** (1:10, wt./wt.) systems, and examd. the relationship between protein preservation, phase sepn. and crystn. during dry storage. The glucose/**trehalose** system preserved glucose-6-phosphate dehydrogenase better than did the glucose/sucrose system with the same glass transition temp. (Tg). The Williams-Landel-Ferry kinetic anal. indicated that the superiority of the glucose/**trehalose** system over the glucose/sucrose system was possibly assocd. with a low free vol. and a low free vol. expansion at temps. above the Tg. Phase sepn. and crystn. during storage were studied using differential scanning calorimetry, and three sep. domains were identified in stored samples (i.e., sugar crystals, glucose-rich and disaccharide-rich amorphous domains). Phase sepn. and crystn. were significantly retarded in the glucose/**trehalose** system. Our data suggest that the superior stability of the **trehalose** system is assocd. with several properties of the **trehalose** glass, including low free vol., restricted mol. mobility and the ability to resist phase sepn. and crystn. during storage.
ST protein preservation dehydration sucrose **trehalose** glass; phase sepn crystn protein storage carbohydrate
IT Enzyme kinetics
(of inhibition; protein inactivation in amorphous sucrose and **trehalose** matrixes with regard to effects of phase sepn. and crystn.)
IT Crystallization
Dehydration
Dehydration, physiological
Glass structure
Glass transition temperature
Phase separation
(protein inactivation in amorphous sucrose and **trehalose** matrixes with regard to effects of phase sepn. and crystn.)

IT Enzymes, biological studies
Proteins, general, biological studies
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process)
(protein inactivation in amorphous sucrose and **trehalose** matrixes with regard to effects of phase sepn. and crystn.)
IT Carbohydrates, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); BIOL (Biological study); PROC (Process)
(protein inactivation in amorphous sucrose and **trehalose** matrixes with regard to effects of phase sepn. and crystn.)
IT **Preservation**
(protein; protein inactivation in amorphous sucrose and **trehalose** matrixes with regard to effects of phase sepn. and crystn.)
IT 9001-40-5, Glucose-6-phosphate dehydrogenase
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process)
(protein inactivation in amorphous sucrose and **trehalose** matrixes with regard to effects of phase sepn. and crystn.)
IT 50-99-7, Glucose, biological studies 57-50-1, Sucrose, biological studies **99-20-7, Trehalose**
RL: BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); BIOL (Biological study); PROC (Process)
(protein inactivation in amorphous sucrose and **trehalose** matrixes with regard to effects of phase sepn. and crystn.)
RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Aldous, B; Cryo-Letters 1995, V16, P181 HCAPLUS
(2) Arakawa, T; Adv Drug Deliv Rev 1993, V10, P1 HCAPLUS
(3) Cardona, S; J Food Sci 1997, V62, P105 HCAPLUS
(4) Carpenter, J; Biochemistry 1989, V28, P3916 HCAPLUS
(5) Chang, B; Arch Biochem Biophys 1996, V331, P249 HCAPLUS
(6) Crowe, J; Arch Biochem Biophys 1983, V220, P477 HCAPLUS
(7) Crowe, J; Cryobiology 1994, V31, P355 MEDLINE
(8) Crowe, J; Water and Life 1992, P87
(9) Crowe, L; Biochim Biophys Acta 1984, V769, P141 HCAPLUS
(10) Crowe, L; Biophys J 1996, V71, P2087 HCAPLUS
(11) Ding, S; J Therm Anal 1996, V47, P1391 HCAPLUS
(12) Duddu, S; Pharmaceut Res 1997, V14, P591 HCAPLUS
(13) Franks, F; Trends Biotechnol 1994, V12, P114 HCAPLUS
(14) Gaffney, S; J Chem Soc Faraday Trans 1988, V84, P2545 HCAPLUS
(15) Green, J; J Phys Chem 1989, V93, P2880 HCAPLUS
(16) Koster, K; J Therm Anal 1996, V47, P1581 HCAPLUS
(17) Leopold, A; Stress Responses in Plants: Adaptation and Acclimation Mechanisms 1990, P37
(18) Leslie, S; Appl Environ Microbiol 1995, V61, P3592 HCAPLUS
(19) Mazzobre, M; Food Sci Technol 1997, V30, P324 HCAPLUS
(20) Miller, D; Pharmaceut Res 1997, V14, P578 HCAPLUS
(21) Mouradian, R; Biochim Biophys Acta 1984, V778, P615 HCAPLUS
(22) O'Brien, J; J Food Sci 1996, V61, P679 HCAPLUS
(23) Roser, B; BioPharm 1991, V4, P47 HCAPLUS
(24) Saleki-Gerhardt, A; J Pharmaceut Sci 1995, V84, P318 HCAPLUS
(25) Sastry, G; Biochemistry 1997, V36, P7097 HCAPLUS
(26) Schebor, C; J Food Eng 1996, V30, P269
(27) Slade, L; Crit Rev Food Sci Nutr 1991, V30, P115 HCAPLUS
(28) Sun, W; Ann Bot 1994, V74, P601
(29) Sun, W; Ann Bot 1997, V79, P291
(30) Sun, W; Biophys J 1996, V70, P1769 HCAPLUS

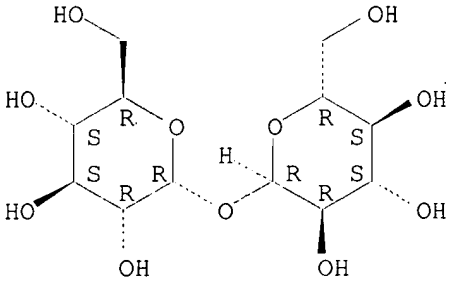
(31) Sun, W; Comp Biochem Physiol 1997, V117A, P327 HCAPLUS
(32) Sun, W; Cryo-Letters 1997, V18, P99 HCAPLUS
(33) Sun, W; Cryo-Letters 1998, V19, P105
(34) Sun, W; Cryo-Letters 1998, V19, P66 HCAPLUS
(35) Sun, W; Physiol Plant 1994, V90, P621 HCAPLUS
(36) Uritani, M; J Biochem 1995, V117, P774 HCAPLUS
(37) Williams, M; J Am Chem Soc 1955, V77, P3701 HCAPLUS
(38) Wolkers, W; Biochim Biophys Acta 1998, V1379, P83 HCAPLUS
(39) Yoshioka, S; Pharmaceut Res 1997, V14, P736 HCAPLUS

IT **99-20-7, Trehalose**
RL: BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); BIOL (Biological study); PROC (Process)
(protein inactivation in amorphous sucrose and **trehalose** matrixes with regard to effects of phase sepn. and crystn.)

RN 99-20-7 HCAPLUS

CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L72 ANSWER 18 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1995:344703 HCAPLUS

DN 122:155595

TI Do **trehalose** and dimethyl sulfoxide affect intermembrane forces?

AU Pincet, Frederic; Perez, Eric; Wolfe, Joe

CS Laboratoire de Physique Statistique, Ecole Normale Superieure, Paris, 75231, Fr.

SO Cryobiology (**1994**), 31(6), 531-9
CODEN: CRYBAS; ISSN: 0011-2240

DT Journal

LA English

CC **9-11** (**Biochemical Methods**)
Section cross-reference(s): 6

AB The sugar **trehalose** is produced in some organisms that survive dehydration and desiccation, and it preserves the integrity of membranes in model systems exposed to dehydration and freezing. DMSO, a solute which permeates membranes, is added to cell suspensions in many protocols for cryopreservation. Using a surface forces app., the authors measured the very large, short-range repulsion between phosphatidylcholine bilayers in water and in solns. of **trehalose**, sorbitol, and DMSO. To the resoln. of the technique, the force-distance curves between bilayers are unchanged by the addn. of **trehalose** or sorbitol in concns. >1 kmol/m3. A relatively small increase in adhesion in the presence of **trehalose** and sorbitol solns. may be explained by their osmotic effects. The partitioning of **trehalose** between aq. solns. and lamellar phases of dioleoylphosphatidylcholine was measured gravimetrically. The amt. of **trehalose** that preferentially adsorbs near membrane surfaces is at most small. The presence of DMSO in water (1:2 by vol.) makes very little difference to the short-range interaction between deposited bilayers, but it sometimes perturbs them in

ways that vary among expts.: free bilayers and/or fusion of the deposited bilayers were each obsd. in about one-third of the expts.

ST phospholipid membrane dehydration freezing protectant; cryoprotectant phospholipid bilayer intermembrane force; **trehalose** intermembrane force bilayer membrane; DMSO intermembrane force bilayer membrane

IT **Organ preservation**
(cryopreservation; **trehalose** and DMSO effects on intermembrane forces study in phospholipid bilayers)

IT Cryoprotectants
Dehydration, biological
Freezing
(**trehalose** and DMSO effects on intermembrane forces study in phospholipid bilayers)

IT Membrane, biological
(bilayer, **trehalose** and DMSO effects on intermembrane forces study in phospholipid bilayers)

IT 68737-67-7, Dioleoylphosphatidylcholine
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(**trehalose** and DMSO effects on intermembrane forces study in phospholipid bilayers)

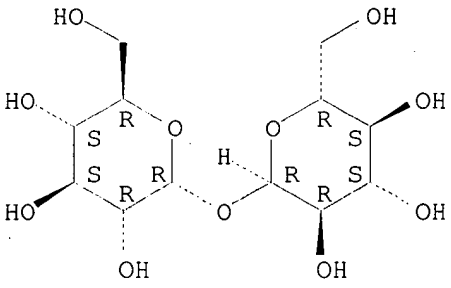
IT 50-70-4, Sorbitol, biological studies 67-68-5, DMSO, biological studies **99-20-7, Trehalose**
RL: BUU (Biological use, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process); USES (Uses)
(**trehalose** and DMSO effects on intermembrane forces study in phospholipid bilayers)

IT **99-20-7, Trehalose**
RL: BUU (Biological use, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process); USES (Uses)
(**trehalose** and DMSO effects on intermembrane forces study in phospholipid bilayers)

RN 99-20-7 HCAPLUS

CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L72 ANSWER 19 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1992:169671 HCAPLUS

DN 116:169671

TI Method and composition for the preservation of red blood cells by lyophilization

IN Rudolph, Alan S.; Larry, Joseph Pat

PA United States Dept. of the Navy, USA

SO U. S. Pat. Appl., 17 pp. Avail. NTIS Order No. PAT-APPL. 7-659 765.
CODEN: XAXXAV

DT Patent

LA English

CC **9-11 (Biochemical Methods)**
Section cross-reference(s): 13
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 659765	A0	19920201	US 1991-659765	19910225 <--
	US 5242792	A	19930907		
PRAI	US 1991-659765		19910225 <--		

AB The title compn. includes a permeabilizing agent (e.g. glycerol), a preserving agent, and a buffered solvent. The compn. is used to prep. erythrocytes for lyophilization, as well as to rehydrate them following lyophilization. A method using the compn. for erythrocyte lyophilization and rehydration is described.. **Trehalose** is the preferred protective agent. When glycerol and **trehalose** were used as permeabilizing and protective agents, resp., the optimum recovery of oxyHb was obsd. with 10% glycerol and 500 mM **trehalose**, where there was no measurable metHb; these conditions also resulted in the highest recovery of the P50 value (an expression of O-carrying capacity).

ST erythrocyte lyophilization rehydration soln; **trehalose** glycerol erythrocyte lyophilization rehydration

IT **Preservatives**
(in erythrocyte lyophilization and rehydration compn.)

IT Erythrocyte
(lyophilization and rehydration of, compn. for)

IT **Freeze drying**
(of erythrocyte, compn. for)

IT Hemoglobins, met-
Hemoglobins, oxy-
RL: BIOL (Biological study)
(**trehalose**-contg. erythrocyte lyophilization and rehydration compn. effect on)

IT Biological transport
(permeation, agent enhancing, in erythrocyte lyophilization and rehydration compn.)

IT **Hydration, biological**
(re-, of erythrocyte, compn. for)

IT 7782-44-7, Oxygen, biological studies
RL: BIOL (Biological study)
(carrying capacity, **trehalose**-contg. erythrocyte lyophilization and rehydration compn. effect on)

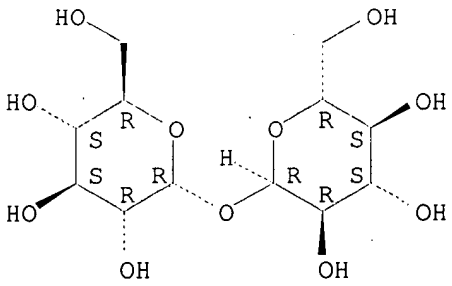
IT 56-81-5, Glycerol, biological studies **99-20-7, Trehalose**
RL: BIOL (Biological study)
(in erythrocyte lyophilization and rehydration compn.)

IT **99-20-7, Trehalose**
RL: BIOL (Biological study)
(in erythrocyte lyophilization and rehydration compn.)

RN 99-20-7 HCAPLUS

CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L72 ANSWER 20 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 1992:124367 HCAPLUS
DN 116:124367
TI Stabilization of biological macromolecular substances and other organic compounds with nonreducing polyhydroxy glycosides or oligosaccharides
IN Roser, Bruce Joseph; Colaco, Camilo
PA Quadrant Holdings Cambridge Ltd., UK
SO PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12N009-96
ICS A61K047-26
CC **9-2** (**Biochemical Methods**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9118091	A1	19911128	WO 1991-GB759	19910514 <--
	W: AT, AU, BB, BG, BR, CA, CH, DE, DK, ES, FI, GB, HU, JP, KP, KR, LK, LU, MC, MG, MW, NL, NO, PL, RO, SD, SE, SU, US				
	RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FR, GA, GB, GR, IT, LU, ML, MR, NL, SE, SN, TD, TG				
	AU 9178725	A1	19911210	AU 1991-78725	19910514 <--
	EP 541556	A1	19930519	EP 1991-909487	19910514 <--
	EP 541556	B1	19980916		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	JP 05508315	T2	19931125	JP 1991-509304	19910514 <--
	JP 3101320	B2	20001023		
	AT 171209	E	19981015	AT 1991-909487	19910514 <--
	ES 2125237	T3	19990301	ES 1991-909487	19910514 <--
	US 5621094	A	19970415	US 1994-255565	19940608 <--
PRAI	GB 1990-10742	A	19900514 <--		
	WO 1991-GB759	A	19910514 <--		
	US 1992-965384	B1	19921214 <--		

AB (Bio)org. compds. are preserved in a dry state, at elevated temps., and/or under irradn. with nonreducing oligosaccharides or polyhydroxy glycosides. Restriction endonuclease PstI was dried at room temp. in the presence of **trehalose** then stored for 2 wks at 37.degree.. The enzyme retained 100% of its original activity after this treatment.
ST bioorg compd preservation drying temp; irradn bioorg compd preservation; oligosaccharide nonreducing bioorg compd preservation; polyhydroxy glycoside nonreducing preservation biomol
IT Galactosides
Glycosides
Oligosaccharides
RL: ANST (Analytical study)
(nonreducing, bioorg. compd. stabilization to drying and elevated temp. and irradn. with)
IT **Preservation**
(of org. and bioorg. compds., to drying and elevated temp. and irradn., with nonreducing polyhydroxy glycosides and oligosaccharides)
IT Temperature effects, biological
(on org. and bioorg. compds., stabilization with nonreducing polyhydroxy glycosides and oligosaccharides in relation to.)
IT **Drying**
(stabilization of org. and bioorg. compds. to, with nonreducing polyhydroxy glycosides and oligosaccharides)
IT Organic compounds, miscellaneous
RL: MSC (Miscellaneous)
(stabilization of, to drying and elevated temp. and irradn., with nonreducing polyhydroxy glycosides and oligosaccharides)
IT Light stabilizers

(UV, nonreducing polyhydroxy glycosides and oligosaccharides as, for org. and bioorg. compds.)

IT Carbohydrates and Sugars, uses
RL: USES (Uses)
(alditols, nonreducing, glycosides, bioorg. compd. stabilization to drying and elevated temp. and irradn. with)

IT Organic compounds, miscellaneous
RL: MSC (Miscellaneous)
(biol., stabilization of, to drying and elevated temp. and irradn., with nonreducing polyhydroxy glycosides and oligosaccharides)

IT Oligosaccharides
RL: ANST (Analytical study)
(di-, nonreducing, bioorg. compd. stabilization to drying and elevated temp. and irradn. with)

IT Alcohols, uses
RL: USES (Uses)
(polyhydric, nonreducing, glycosides, bioorg. compd. stabilization to drying and elevated temp. and irradn. with)

IT Phycoerythrins
RL: ANST (Analytical study)
(R-, stabilization to drying of, nonreducing oligosaccharides and polyhydroxy glycosides in)

IT 13718-94-0, Isomaltulose 64519-82-0, Palatinit 50-70-4, Sorbitol, biological studies 57-50-1, Sucrose, biological studies 69-65-8, Mannitol **99-20-7, Trehalose** 470-55-3, Stachyose 512-69-6, Raffinose 534-73-6 585-86-4, Lactitol 585-88-6, Maltitol 597-12-6, Melezitose 4233-70-9
RL: ANST (Analytical study)
(bioorg. compd. stabilization to drying and elevated temp. and irradn. with)

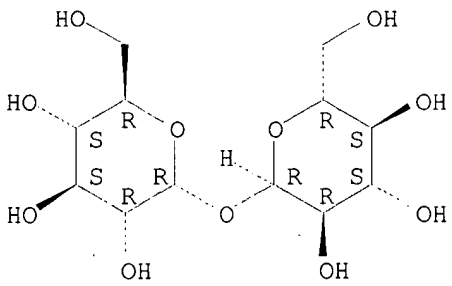
IT 9012-36-6P, Agarose
RL: PREP (Preparation)
(gels, stabilization to drying of, nonreducing oligosaccharides and polyhydroxy glycosides in)

IT 9003-99-0D, Peroxidase, fusion products with Ig F(ab)2 fragment 81295-32-1, Restriction endonuclease PstI
RL: ANST (Analytical study)
(stabilization to drying of, nonreducing oligosaccharides and polyhydroxy glycosides in)

IT **99-20-7, Trehalose**
RL: BIOL (Biological study)
(bioorg. compd. stabilization to drying and elevated temp. and irradn. with)

RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L72 ANSWER 21 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 1988:507400 HCAPLUS

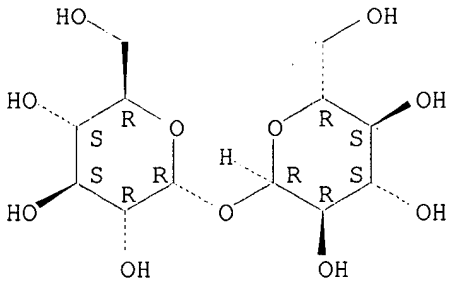
DN 109:107400
TI Polyhydroxy compounds in the preservation of biological materials such as hemoglobin, erythrocytes, liposomes, and cells
IN Hayward, James Arthur; Johnston, David Samuel
PA Biocompatibles Ltd., UK
SO PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C07K003-00
ICS C07K013-00; A61K009-50; A61K035-48
ICA A61K037-04; C12N009-36; C12N009-96
CC **9-11 (Biochemical Methods)**
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 8705300	A2	19870911	WO 1987-GB143	19870227 <--
	WO 8705300	A3	19871022		
	W: JP, US				
	RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
	EP 259425	A1	19880316	EP 1987-901561	19870227 <--
	R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
	JP 63502592	T2	19880929	JP 1987-501509	19870227 <--
PRAI	GB 1986-4983		19860228 <--		
	WO 1987-GB143		19870227 <--		

AB A material having a water-dependent structure is preserved by contacting the material with an aq. soln. of a polyhydroxy compd. and then removing water. Carbohydrates were added to aq. Hb solns. (0.015M) to 0.25M concn. and the mixts. were dehydrated. The percentage of metHb formed was measured in rehydrated protein. In the absence of sugar, the percentage increased to 90% of the total. Each of the carbohydrates tested (arabinose, galactose, fucose, glucose, mannose, maltose, lactose, **trehalose**, sucrose) protected the Hb against oxidative damage. This protective effect was manifest even in samples that had been stored in the dried state for >3 mo.
ST polyol biol material preservation; Hb preservation carbohydrate; erythrocyte preservation carbohydrate; liposome preservation carbohydrate; cell preservation carbohydrate
IT Hexoses
Monosaccharides
Oligosaccharides
Pentoses
Carbohydrates and Sugars, biological studies
RL: ANST (Analytical study)
(in biol. materials preservation)
IT **Dehydration, biological**
(of biol. materials, polyhydroxy compds. in)
IT **Blood preservation**
(polyhydroxy compds. in)
IT Biological materials
Cell
Liposome
Proteins, biological studies
Hemoglobins
Hemoglobins, oxy-
RL: BIOL (Biological study)
(preservation of, polyhydroxy compds. in)
IT Oligosaccharides
RL: ANST (Analytical study)
(di-, in biol. materials preservation)
IT Organelle
(hemosome, preservation of, polyhydroxy compds. in)
IT Carbohydrates and Sugars, biological studies

RL: BIOL (Biological study)
(nonreducing, in biol. materials preservation)
IT Hydroxy compounds
RL: ANST (Analytical study)
(poly-, in biol. materials preservation)
IT Alcohols, biological studies
RL: BIOL (Biological study)
(polyhydric, in biol. materials preservation)
IT Carbohydrates and Sugars, biological studies
RL: BIOL (Biological study)
(trioses, in biol. materials preservation)
IT 63-42-3, Lactose 69-79-4, Maltose 147-81-9, Arabinose 2438-80-4, Fucose 3458-28-4, Mannose 57-50-1, Sucrose, biological studies
RL: ANST (Analytical study)
(in Hb preservation)
IT **99-20-7, Trehalose** 50-99-7, Glucose, biological studies 59-23-4, Galactose, biological studies
RL: ANST (Analytical study)
(in biol. materials preservation)
IT 9001-63-2, Lysozyme
RL: PROC (Process)
(preservation of, polyhydroxy compds. in)
IT **99-20-7, Trehalose**
RL: ANST (Analytical study)
(in biol. materials preservation)
RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



=> d l73 all hitstr tot

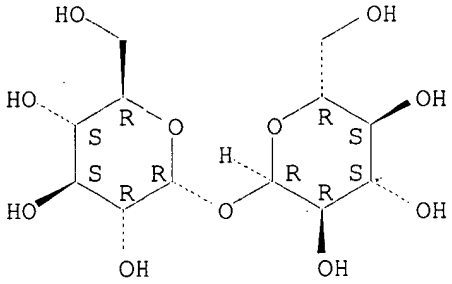
L73 ANSWER 1 OF 11 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2003:656142 HCAPLUS
DN 139:176355
TI Bulk drying and the effects of inducing bubble nucleation
IN Bronshtein, Victor; Bracken, Kevin R.; Campbell, John G.
PA USA
SO U.S. Pat. Appl. Publ., 22 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM B01J013-02
ICS B01J013-04
NCL 264004100; 264004600
CC **9-16 (Biochemical Methods)**
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI US 2003155669 A1 20030821 US 2002-274719 20021018
PRAI US 2001-345322P P 20011019
AB The present invention discloses app. and methods of inducing bubble nucleation to overcome problems commonly assocd. with preservation by foam formation. Specifically, the invention relates to methods of using bubble nucleation in foam formation to preserve sensitive biol. materials. Preferred methods of inducing bubble nucleation include, mixing, chamber rotation, crystals, and ultrasound.
ST bulk drying bubble nucleation
IT Convective flow
(Forced; bulk drying and the effects of inducing bubble nucleation)
IT Mixers (processing apparatus)
(Magnetic; bulk drying and the effects of inducing bubble nucleation)
IT Containers
(Process; bulk drying and the effects of inducing bubble nucleation)
IT Pressure
(Vacuum; bulk drying and the effects of inducing bubble nucleation)
IT Apparatus
Biological materials
Blades
Boiling
Bubbles
Coating materials
Containers
Crystals
Drying
Foaming
Freezing
Frequency
Heating
Mixing
Nucleation
Preservation
Pressure
Pressure sensors
Rings (apparatus)
Rotation
Shear
Solutions
Sound and Ultrasound
Suspensions
Temperature
Temperature sensors
(bulk drying and the effects of inducing bubble nucleation)
IT Amino acids, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(bulk drying and the effects of inducing bubble nucleation)
IT Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(bulk drying and the effects of inducing bubble nucleation)
IT Vacuum
(pressure; bulk drying and the effects of inducing bubble nucleation)
IT Mixers (processing apparatus)
(stirrers, Bars; bulk drying and the effects of inducing bubble nucleation)
IT 50-99-7, Glucose, biological studies 57-48-7, D-Fructose, biological studies 57-50-1, Sucrose, biological studies 58-08-2, Caffeine, biological studies 87-89-8, Inositol **99-20-7**, **Trehalose**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(bulk drying and the effects of inducing bubble nucleation)

IT 9002-84-0, Teflon
RL: TEM (Technical or engineered material use); USES (Uses)
(bulk drying and the effects of inducing bubble nucleation)
IT **99-20-7, Trehalose**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(bulk drying and the effects of inducing bubble nucleation)
RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



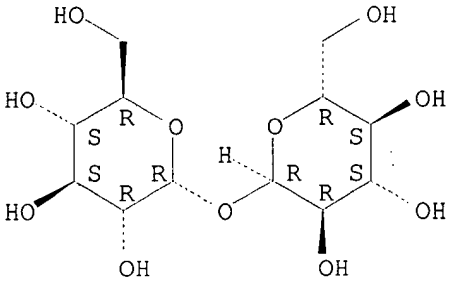
L73 ANSWER 2 OF 11 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2003:126473 HCAPLUS
DN 139:115030
TI Stabilization of membranes in human platelets freeze-dried with **trehalose**
AU Crowe, John H.; Tablin, Fern; Wolkers, Willem F.; Gousset, Karine; Tsvetkova, Nelly M.; Ricker, Josette
CS Center for Biostabilization, University of California, Davis, CA, 95616, USA
SO Chemistry and Physics of Lipids (2003), 122(1-2), 41-52
CODEN: CPLIA4; ISSN: 0009-3084
PB Elsevier Science Ltd.
DT Journal
LA English
CC 13-5 (Mammalian Biochemistry)
Section cross-reference(s): **9**
AB Human blood platelets are normally stored in blood banks for 3-5 days, after which they are discarded. We have launched an effort at developing means for preserving the platelets for long term storage. In previous studies we have shown that **trehalose** can be used to preserve biol. membranes and proteins during drying and have provided evidence concerning the mechanism. A myth has grown up about special properties of **trehalose**, which we discuss here and clarify some of what is fact and what is misconception. We have found a simple way of introducing this sugar into the cytoplasm of platelets and have successfully freeze-dried the **trehalose**-loaded platelets, with very promising results. We present evidence that membrane microdomains are maintained intact in the platelets freeze-dried with **trehalose**. Finally, we propose a possible mechanism by which the microdomains are preserved.
ST **trehalose** platelet preservation membrane stabilization freeze drying
IT **Blood preservation**
Cell membrane
Freeze drying
Human
Platelet (blood)
(stabilization of membranes in human platelets freeze-dried with **trehalose**)

IT **99-20-7, Trehalose**
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(stabilization of membranes in human platelets freeze-dried with **trehalose**)

RE.CNT 59 THERE ARE 59 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Aldous, B; Cryo-Lett 1995, V16, P181 HCAPLUS
(2) Arguelles, J; Arch Microbiol 2000, V174, P217 HCAPLUS
(3) Beattie, G; Diabetes 1997, V46, P519 HCAPLUS
(4) Benaroudj, N; J Biol Chem 2001, V26, P24261
(5) Branca, C; J Chem Phys 1999, V111, P281 HCAPLUS
(6) Brown, D; Annu Rev Cell Dev Biol 1998, V14, P111 HCAPLUS
(7) Brown, D; J Membr Biol 1998, V164, P103 HCAPLUS
(8) Buera, M; Biotechnol Prog 1999, V15, P577 HCAPLUS
(9) Chen, T; Cryobiology 2000, V40, P277 HCAPLUS
(10) Chen, T; Cryobiology 2001, V43, P168 HCAPLUS
(11) Crowe, J; Annu Rev Physiol 1998, V6, P73
(12) Crowe, J; Biochem J 1987, V242, P1 HCAPLUS
(13) Crowe, J; Cryobiology 1997, V35, P20 HCAPLUS
(14) Crowe, J; Cryobiology 2001, V43, P89 HCAPLUS
(15) Crowe, J; Liposome Technology, second ed 1992
(16) Crowe, J; Proc Natl Acad Sci USA 1987, V84, P1537 HCAPLUS
(17) Crowe, L; Biochim Biophys Acta 1988, V946, P193 HCAPLUS
(18) Crowe, L; Biophys J 1996, V71, P2087 HCAPLUS
(19) de Castro, A; FEBS Lett 2000, V487, P199
(20) Eroglu, A; Nat Biotechnol 2000, V18, P163 HCAPLUS
(21) Esteves, M; Biotechnol Lett 2000, V22, P417 HCAPLUS
(22) Gimeno-Alcaniz, J; Biotechnol Lett 1999, V21, P271 HCAPLUS
(23) Gordon, S; Cryobiology 2001, V43, P182 HCAPLUS
(24) Gousset, K; Biochemistry Submitted for publication 2003
(25) Gousset, K; J Cell Physiol 2002, V190, P117 HCAPLUS
(26) Green, J; J Phys Chem 1989, V93, P2880 HCAPLUS
(27) Guo, N; Nat Biotechnol 2000, V18, P168 HCAPLUS
(28) Hays, L; Cryobiology 2001, V42, P88 HCAPLUS
(29) Hays, L; Proc Natl Acad Sci 1995, V93, P6835
(30) Hincha, D; Eur J Biochem 2000, V267, P535 HCAPLUS
(31) Hoekstra, F; Comp Biochem Physiol (A) 1997, V117A, P335 HCAPLUS
(32) Joo, W; Biotechnol Lett 2000, V22, P1021 HCAPLUS
(33) Kitahara, A; Br J Plast Surg 1998, V51, P118 MEDLINE
(34) Koster, K; Biophys J 2000, V78, P1932 HCAPLUS
(35) Leslie, S; Econ Environ Microbiol 1995, V61, P3592 HCAPLUS
(36) Leyman, B; Trends Plant Sci 2001, V6, P510 HCAPLUS
(37) Li, S; J Pharm Sci 1996, V85, P873 HCAPLUS
(38) Liu, Q; J Am Chem Soc 1997, V119, P7851 HCAPLUS
(39) Mansure, J; Biochim Biophys Acta Bio-Membr 1994, V1191, P309 HCAPLUS
(40) Matsuo, T; Br J Ophthalmol 2001, V85, P610 MEDLINE
(41) Mendelsohn, R; Chem Phys Lipids 1998, V96, P141 HCAPLUS
(42) Mendelsohn, R; Chem Phys Lipids 1998, V96, P141 HCAPLUS
(43) Nishizaki, Y; Nutr Res 2000, V20, P653 HCAPLUS
(44) Norcia, M; Compositions and methods for wound management 2000, P424
(45) Otsubo, M; Hort Sci 2000, V35, P1107 HCAPLUS
(46) O'Brien, J; J Food Sci 1996, V61, P679 HCAPLUS
(47) Potts, M; Trends Microbiol 2001, V9, P553 HCAPLUS
(48) Ricker, J; Biophysical Journal In press 2002
(49) Schebor, C; Biotechnol Prog 1997, V13, P857 HCAPLUS
(50) Schebor, C; Biotechnol Prog 2000, V16, P163 HCAPLUS
(51) Schebor, C; Lebensm-Wiss Technol 1999, V32, P481 HCAPLUS
(52) Sun, W; Biophys J 1996, V70, P1769 HCAPLUS
(53) Sussich, F; Carbohydr Res 2001, V334, P165 HCAPLUS
(54) Tablin, F; Cryobiology 2001, V43, P114 HCAPLUS
(55) Tablin, F; J Cell Physiol 1996, V168, P305 HCAPLUS
(56) Tsvetkova, N; Mol Membr Biol 1999, V16, P265 HCAPLUS

(57) Wolkers, W; Cryobiology 2001, V42, P79 HCAPLUS
(58) Wolkers, W; Mol Membrane Biology in press 2003
(59) Yoshizane, C; Nutr Res 2000, V20, P1485 HCAPLUS
IT **99-20-7, Trehalose**
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(stabilization of membranes in human platelets freeze-dried with **trehalose**)
RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



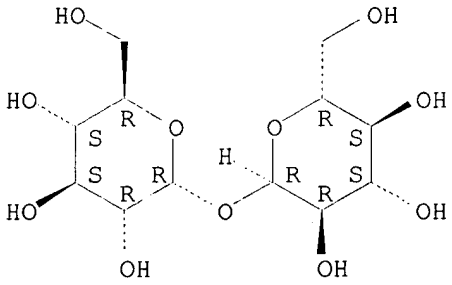
L73 ANSWER 3 OF 11 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2003:58684 HCAPLUS
DN 138:119601
TI Vacuum-mediated desiccation protection of cells
IN Levine, Fred
PA Regents of the University of California, USA
SO U.S. Pat. Appl. Publ., 29 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM A01N001-02
ICS C12N005-06
NCL 435002000; 435325000; 514053000
CC **9-11 (Biochemical Methods)**
Section cross-reference(s): 3
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003017444	A1	20030123	US 2001-812042	20010319
	US 6528309	B2	20030304		
PRAI	US 2001-812042		20010319		

AB The present invention provides methods and compns. for the protection and storage of cells. In particular, the present invention provides methods and compns. for the vacuum-mediated desiccation protection of mammalian cells. In particularly preferred embodiments, cells are treated with a carbohydrate (e.g., a disaccharide) prior to vacuum-mediated desiccation.
ST vacuum desiccation human cell storage carbohydrate **trehalose** expression preservation
IT Animal cell line
(12F; vacuum-mediated desiccation protection of cells)
IT Adenoviral vectors
(expressing otsA and otsB; vacuum-mediated desiccation protection of cells)
IT Animal cell
(mammalian; vacuum-mediated desiccation protection of cells)
IT Alcohols, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES

(Uses)
(polyhydric; vacuum-mediated desiccation protection of cells)
IT Adhesion, biological
Animal cell
Drying
Genetic methods
Human
Preservation
Storage
Thermal shock
Vacuum
(vacuum-mediated desiccation protection of cells)
IT Carbohydrates, biological studies
Disaccharides
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(vacuum-mediated desiccation protection of cells)
IT **99-20-7, Trehalose**
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(expression of; vacuum-mediated desiccation protection of cells)
IT 7782-44-7, Oxygen, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(less that 3%; vacuum-mediated desiccation protection of cells)
IT 488762-68-1 488762-69-2 488762-70-5 488762-71-6
RL: PRP (Properties)
(unclaimed nucleotide sequence; vacuum-mediated desiccation protection of cells)
IT **99-20-7, Trehalose**
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(expression of; vacuum-mediated desiccation protection of cells)
RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

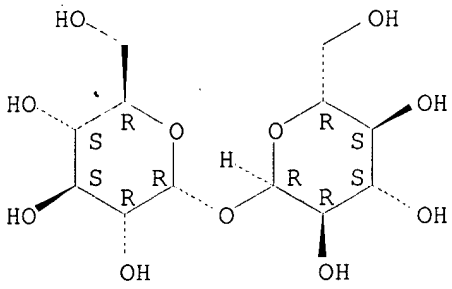


L73 ANSWER 4 OF 11 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2002:690028 HCAPLUS
DN 138:398272
TI The glass transition temperature of mixtures of **trehalose** and hydroxyethyl starch
AU Chen, Tani; Bhowmick, Sankha; Sputtek, Andreas; Fowler, Alex; Toner, Mehmet
CS Massachusetts General Hospital, Center for Engineering in Medicine and Surgical Services, Harvard Medical School and Shriners Hospital for Children, Boston, MA, 02114, USA
SO Cryobiology (2002), 44(3), 301-306
CODEN: CRYBAS; ISSN: 0011-2240

PB Elsevier Science
DT Journal
LA English
CC **9-11 (Biochemical Methods)**
AB Although mixts. of HES and sugars are used to preserve cells during freezing or drying, little is known about the glass transition of HES, or how mixts. of HES and sugars vitrify. These difficulties may be due to the polydispersity between HES samples or differences in prepn. techniques, as well as problems in measuring the glass transition temp. (Tg) using differential scanning calorimetry (DSC). In this report, we examine the Tg of mixts. of HES and **trehalose** sugar with <1% moisture content using DSC measurements. By extrapolating these measurements to pure HES using the Gordon-Taylor and Fox equations, we were able to est. the Tg of our HES sample at 44 .degree.C. These results were addnl. confirmed by using mixts. of glucose-HES which yielded a similar extrapolated Tg value. Our approach to estg. the glass transition temp. of HES may be useful in other cases where glass transitions are not easily identified.
ST glass transition temp trehalase hydroxyethyl starch cryopreservation; cryoprotectant glass transition temp modeling
IT Simulation and Modeling, physicochemical
(Fox equation; glass transition temp. of mixts. of **trehalose** starch used in cell cryopreservation)
IT Simulation and Modeling, physicochemical
(Gordon-Taylor equation; glass transition temp. of mixts. of **trehalose** starch used in cell cryopreservation)
IT Cell
Cryopreservation
Cryoprotectants
Freeze drying
Glass transition temperature
(glass transition temp. of mixts. of **trehalose** starch used in cell cryopreservation)
IT **99-20-7, Trehalose** 9005-27-0, Hydroxyethyl starch
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(glass transition temp. of mixts. of **trehalose** starch used in cell cryopreservation)
RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Banks, W; Br J Pharmacol 1973, V47, P172 HCAPLUS
(2) Chen, T; Cryobiology 2000, V40, P277 HCAPLUS
(3) Crowe, J; Annu Rev Physiol 1998, V60, P73 HCAPLUS
(4) Crowe, J; Biochem Biophys Acta 1996, V1280, P187 HCAPLUS
(5) Crowe, J; Cryobiology 1997, V35, P20 HCAPLUS
(6) Fox, T; J Appl Phys 1950, V21, P581 HCAPLUS
(7) Gordon, M; J Appl Chem 1952, V2, P493 HCAPLUS
(8) Jochem, M; Cryobiology 1987, V24, P513 HCAPLUS
(9) Koerber, C; Cryobiology 1980, V17, P54 HCAPLUS
(10) Kresin, M; Cryo-Lett 1992, V13, P371 HCAPLUS
(11) Rindler, V; Cryobiology 1999, V38, P2 HCAPLUS
(12) Roos, Y; Biotechnol Prog 1991, V7, P49 HCAPLUS
(13) Scheiwe, M; Cryobiology 1982, V19, P461 HCAPLUS
(14) Spieles, G; Cryo-Lett 1996, V17, P43
(15) Sputtek, A; Z Klin Med 1991, V46, P1567 HCAPLUS
(16) Wolfe, J; Cryobiology 1999, V39, P103 HCAPLUS
(17) Wunderlich, B; Thermal Analysis 1990
IT **99-20-7, Trehalose**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(glass transition temp. of mixts. of **trehalose** starch used in cell cryopreservation)
RN 99-20-7 HCAPLUS

CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L73 ANSWER 5 OF 11 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2002:638128 HCAPLUS
DN 137:152032
TI Erythrocytic cells and method for preserving cells
IN Crowe, John H.; Crowe, Lois M.; Tablin, Fern; Wolkers, Willem F.; Tsvetkova, Nelly M.; Oliver, Ann F.
PA USA
SO U.S. Pat. Appl. Publ., 63 pp., Cont.-in-part of U.S. Ser. No. 927,760.
CODEN: USXXCO
DT Patent
LA English
IC ICM A61K048-00
ICS A61K031-56
NCL 424093210
CC **9-11 (Biochemical Methods)**
Section cross-reference(s): 13
FAN.CNT 3

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2002114791	A1	20020822	US 2002-52162	20020116
US 2001019819	A1	20010906	US 2001-828627	20010405
US 2002076445	A1	20020620	US 2001-927760	20010809
WO 2003014331	A1	20030220	WO 2002-US24773	20020805

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI	US 2000-501773	B2	20000210
	US 2001-828627	A2	20010405
	US 2001-927760	A2	20010809
	US 2002-52162	A	20020116

AB The invention concerns a dehydrated compn. is provided that includes freeze-dried erythrocytic cells. Alc. (e.g., sterol or cholesterol) is at least partially removed from erythrocytic cells including erythrocytic membranes. After removal of at least part of the alc., the erythrocytic cells have a low phase transition temp. range, an intermediate phase transition temp. range, and a high phase transition temp. range. The erythrocytic cells may be loaded with an oligosaccharide (e.g., **trehalose**) which preserves biol. properties during freeze-drying and rehydration. A process for increasing cooperativity of a phase

transition of an erythrocytic cell. A process for preserving and/or increasing the survival of dehydrated erythrocytic cells, including storing dehydrated erythrocytic cells having a residual water content equal to or less than about 0.30 g of water per g of dry wt. erythrocytic cells.

ST eukaryote cell culture temp preservation **trehalose** oligosaccharide phase transition

IT Animal cell line
(293H; erythrocytic cells and method for preserving cells)

IT Animal tissue culture
Cryopreservation
Cryoprotectants
Dehydration, physiological
Erythrocyte
Freeze drying
Heating
Membrane, biological
Phase transition
Platelet (blood)
Preservatives
Temperature effects, biological
Washing
(erythrocytic cells and method for preserving cells)

IT Oligosaccharides, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(erythrocytic cells and method for preserving cells)

IT Alcohols, properties
Steroids, properties
RL: PRP (Properties); REM (Removal or disposal); PROC (Process)
(erythrocytic cells and method for preserving cells)

IT Endocytosis
(lipid phase; erythrocytic cells and method for preserving cells)

IT Animal cell
(mammalian; erythrocytic cells and method for preserving cells)

IT **Hydration, physiological**
(rehydration; erythrocytic cells and method for preserving cells)

IT Mesenchyme
(stem cell; erythrocytic cells and method for preserving cells)

IT **99-20-7, Trehalose** 7732-18-5, Water, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(erythrocytic cells and method for preserving cells)

IT 9002-04-4, Thrombin
RL: NUU (Other use, unclassified); USES (Uses)
(erythrocytic cells and method for preserving cells)

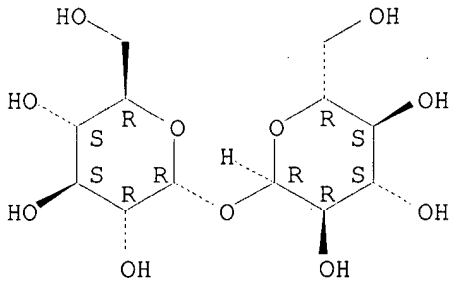
IT 57-88-5, Cholesterol, properties
RL: PRP (Properties); REM (Removal or disposal); PROC (Process)
(erythrocytic cells and method for preserving cells)

IT **99-20-7, Trehalose**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(erythrocytic cells and method for preserving cells)

RN 99-20-7 HCAPLUS

CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L73 ANSWER 6 OF 11 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2002:466549 HCAPLUS
DN 137:17442
TI Eukaryotic cells and method for preserving cells
IN Crowe, John H.; Tablin, Fern; Wolkers, Willem F.; Oliver, Ann E.; Walker, Naomi J.; Htoo, Thurein; Jamil, Kamran
PA USA
SO U.S. Pat. Appl. Publ., 36 pp., Cont.-in-part of U.S. Ser. No. 828,627.
CODEN: USXXCO
DT Patent
LA English
IC ICM A61K035-14
ICS A01N001-02
NCL 424532000
CC **9-11 (Biochemical Methods)**
Section cross-reference(s): 13
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002076445	A1	20020620	US 2001-927760	20010809
	US 2001019819	A1	20010906	US 2001-828627	20010405
	US 2002009500	A1	20020124	US 2001-938408	20010823
	US 2002114791	A1	20020822	US 2002-52162	20020116
	WO 2003014305	A2	20030220	WO 2002-US24772	20020805
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	WO 2003014331	A1	20030220	WO 2002-US24773	20020805
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
PRAI	US 2000-501773	B1	20000210		
	US 2001-828627	A2	20010405		
	US 2001-927760	A2	20010809		
	US 2002-52162	A	20020116		

AB A dehydrated compn. is provided that includes freeze-dried eukaryotic cells. The eukaryotic cells are loaded with an oligosaccharide (e.g., **trehalose**) which preserves biol. properties during freeze-drying and rehydration. The oligosaccharide loading is conducted at a temp. of from greater than about 25.degree.. to less than about 50.degree.., more preferably at about 35.degree.., with the loading soln. having the oligosaccharide in an amt. from about 10 mM to about 100 mM. These freeze-dried eukaryotic cells are rehydratable. A process for preserving and/or increasing the survival of dehydrated eukaryotic cells, including storing dehydrated eukaryotic cells having a residual water content greater than about 0.15 g of water per g of dry wt. eukaryotic cells.

ST eukaryotic cell preserving

IT Animal cell line
(293H; eukaryotic cells and method for preserving cells)

IT **Hydration, physiological**
(Prehydration; eukaryotic cells and method for preserving cells)

IT Temperature effects, biological
(cold; eukaryotic cells and method for preserving cells)

IT Animal cell
Animal tissue culture
Cell proliferation
Composition
Dehydration, physiological
Eukaryota
Freeze drying
Freezing point
Mammalia
Phase transition temperature
Platelet (blood)
Preservation
Preservatives
Solutions
Storage
Temperature effects, biological
Washing
(eukaryotic cells and method for preserving cells)

IT Oligosaccharides, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(eukaryotic cells and method for preserving cells)

IT Endocytosis
(fluid phase; eukaryotic cells and method for preserving cells)

IT **Hydration, physiological**
(rehydration; eukaryotic cells and method for preserving cells)

IT Mesenchyme
(stem cell; eukaryotic cells and method for preserving cells)

IT Biological transport
(uptake; eukaryotic cells and method for preserving cells)

IT 7732-18-5, Water, biological studies 9002-04-4, Thrombin
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(eukaryotic cells and method for preserving cells)

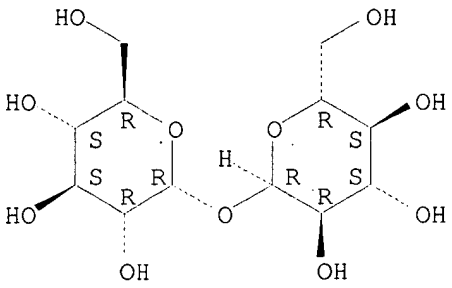
IT **99-20-7, Trehalose**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(eukaryotic cells and method for preserving cells)

IT **99-20-7, Trehalose**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(eukaryotic cells and method for preserving cells)

RN 99-20-7 HCAPLUS

CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



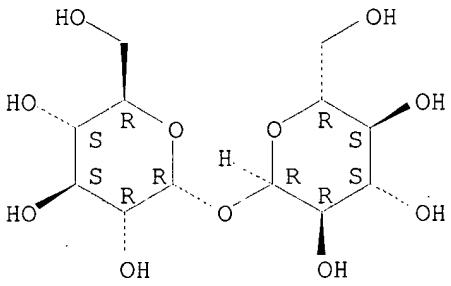
L73 ANSWER 7 OF 11 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2002:107034 HCAPLUS
DN 136:131240
TI Preservation and storage medium for biological materials
IN Depablo, Juan J.; Miller, Danforth P.; Conrad, Paul B.; Corti, Horatio
PA Wisconsin Alumni Research Foundation, USA
SO PCT Int. Appl., 50 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A01N001-02
CC **9-11** (**Biochemical Methods**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002009515	A1	20020207	WO 2001-US14939	20010509
	WO 2002009515	B1	20020627		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 1303184	A1	20030423	EP 2001-945951	20010509
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	BR 2001012638	A	20030624	BR 2001-12638	20010509
PRAI	US 2000-625735	A	20000726		
	WO 2001-US14939	W	20010509		

AB A protectant mixt. for use in preserving biol. material comprising (1) at least one polyhydroxy compd., where the total amt. of polyhydroxy compd. in the mixt. is from about 5 to about 60 by wt. of the mixt. where the mixt. is an aq. soln. and is from about 10 to about 95 where the mixt. is in solid form, and (2) phosphate ions, where the total amt. of phosphate ions in the mixt. is such that the molar ratio of phosphate ions to hydroxy groups in the polyhydroxy compd. is from about 0.025 to about 0.625; a preservation medium comprising (1) a biol. material, (2) at least one polyhydroxy compd., where the total amt. of polyhydroxy compd. in the medium is from about 5 to about 60 by wt. of the medium, and (3) phosphate ions, where the total amt. of phosphate ions in the mixt. is such that the molar ratio of phosphate ions to hydroxy groups in the polyhydroxy compds. is from about 0.025 to about 0.625; methods of preserving the preservation medium; and the resulting preserved biol. material compn.
ST preservation storage medium biol
IT **Drying**
(Ambient-air; preservation and storage medium for biol. materials)

IT Hydroxy compounds
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(polyhydroxy compds.; preservation and storage medium for biol. materials)
IT Biological materials
Cell
Composition
Cryoprotectants
Culture media
Freeze drying
Freezing
Hydroxyl group
Mixtures
Preservation
Solids
Solutions
Storage
pH
(preservation and storage medium for biol. materials)
IT Disaccharides
Monosaccharides
Polysaccharides, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(preservation and storage medium for biol. materials)
IT Enzymes, processes
Proteins
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(preservation and storage medium for biol. materials)
IT **Drying**
(spray; preservation and storage medium for biol. materials)
IT **Drying**
(vacuum; preservation and storage medium for biol. materials)
IT 50-21-5, Lactic acid, biological studies 50-81-7, Ascorbic acid, biological studies 57-50-1, Sucrose, biological studies 77-92-9, Citric acid, biological studies **99-20-7, Trehalose** 497-19-8, Sodium carbonate, biological studies 994-36-5, Sodium citrate 7558-79-4 7558-80-7 7757-82-6, Sodium sulfate, biological studies 7758-11-4 7772-98-7, Sodium thiosulfate 7778-77-0 11129-12-7, Borate 14265-44-2, Phosphate, biological studies 16068-46-5, Potassium phosphate
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(preservation and storage medium for biol. materials)
IT 9001-60-9, L-Lactate dehydrogenase
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(preservation and storage medium for biol. materials)
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Ciba Geigy Ag; WO 9520399 A 1995
(2) Cryopharm Corp; EP 0356257 A 1990 HCAPLUS
(3) Cryopharm Corp; EP 0508496 A 1992 HCAPLUS
(4) Kane, O; US 4476221 A 1984 HCAPLUS
(5) Morishita Pharma; EP 0580444 A 1994 HCAPLUS
IT **99-20-7, Trehalose**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(preservation and storage medium for biol. materials)
RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L73 ANSWER 8 OF 11 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2001:850862 HCAPLUS
DN 135:368939
TI Microinjection of biological tissue with intracellular cryoprotective agents that contain sugar
IN Toner, Mehmet; Eroglu, Ali; Toth, Thomas
PA The General Hospital Corp., USA; Gamete Technologies, Inc.
SO PCT Int. Appl., 54 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A01N
CC **9-11** (**Biochemical Methods**)
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001087062	A2	20011122	WO 2001-US15748	20010516
	WO 2001087062	A3	20020328		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 2002045156	A1	20020418	US 2001-798327	20010302
	AU 2001061644	A5	20011126	AU 2001-61644	20010516
	EP 1283670	A2	20030219	EP 2001-935562	20010516
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				

PRAI US 2000-204877P P 20000516
US 2001-798327 A 20010302
WO 2001-US15748 W 20010516

AB The invention concerns the preservation of biol. tissue using microinjection of intracellular protective agents contg. sugar to preserve cells by freezing and/or drying. A method for biol. material including micro-injecting the cells with sugar; prepg. the cells for storage; storing the biol. material; and recovering the stored biol. material from storage. Carbohydrate sugars such as **trehalose**, sucrose, fructose, dextran, and raffinose, may be used as bio-protective agents.

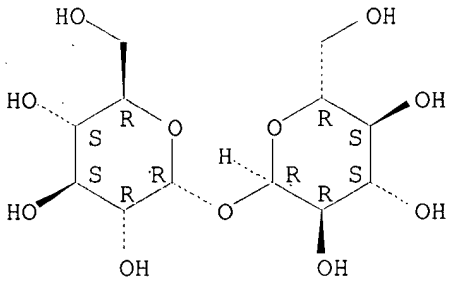
ST micro injection cryoprotectant preservation cell membrane carbohydrate cytoplasm

IT Skin
(epidermis; microinjection of biol. tissue with intracellular cryoprotective agents that contain sugar)

IT Skin
(keratinocyte; microinjection of biol. tissue with intracellular cryoprotective agents that contain sugar)
IT Animal cell
B cell (lymphocyte)
Cell membrane
Chondrocyte
Cryopreservation
Cryoprotectants
Culture media
Cytoplasm
Epithelium
Erythrocyte
Fibroblast
Freeze drying
Glass transition temperature
Hematopoietic precursor cell
Macrophage
Melanocyte
Melting
Molecular weight
Monocyte
Osmolarity
T cell (lymphocyte)
Vacuum
(microinjection of biol. tissue with intracellular cryoprotective agents that contain sugar)
IT Carbohydrates, biological studies
Glycolipids
Glycoproteins, general, biological studies
RL: BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)
(microinjection of biol. tissue with intracellular cryoprotective agents that contain sugar)
IT Muscle
(myogenic cell; microinjection of biol. tissue with intracellular cryoprotective agents that contain sugar)
IT Nerve
(neuron; microinjection of biol. tissue with intracellular cryoprotective agents that contain sugar)
IT Egg
(oocyte; microinjection of biol. tissue with intracellular cryoprotective agents that contain sugar)
IT **Hydration, physiological**
(re-; microinjection of biol. tissue with intracellular cryoprotective agents that contain sugar)
IT Embryo, animal
(stem cell; microinjection of biol. tissue with intracellular cryoprotective agents that contain sugar)
IT Cell
(stem, adult; microinjection of biol. tissue with intracellular cryoprotective agents that contain sugar)
IT 50-70-4, Sorbitol, biological studies 50-99-7, Glucose, biological studies 57-48-7, D-Fructose, biological studies 57-50-1, Sucrose, biological studies 63-42-3, Lactose 69-65-8, Mannitol 69-79-4, Maltose **99-20-7, Trehalose** 470-55-3, Stachyose 512-69-6, Raffinose 9004-54-0, Dextran, biological studies
RL: BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)
(microinjection of biol. tissue with intracellular cryoprotective agents that contain sugar)
IT **99-20-7, Trehalose**
RL: BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological

study); USES (Uses)
(microinjection of biol. tissue with intracellular cryoprotective agents that contain sugar)
RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

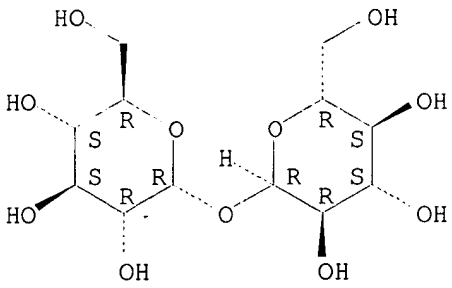
Absolute stereochemistry. Rotation (+).



L73 ANSWER 9 OF 11 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2001:25421 HCAPLUS
DN 134:204612
TI Properties of Human Free Apolipoprotein(a) and Lipoprotein(a) after Either Freezing or Lyophilization in the Presence and Absence of Cryopreservatives
AU Edelstein, Celina; Hinman, Janet; Marcovina, Santica; Scanu, Angelo M.
CS Department of Medicine, University of Chicago, Chicago, IL, 60637, USA
SO Analytical Biochemistry (2001), 288(2), 201-208
CODEN: ANBCA2; ISSN: 0003-2697
PB Academic Press
DT Journal
LA English
CC **9-11 (Biochemical Methods)**
Section cross-reference(s): 6
AB Apolipoprotein(a), apo(a), the specific multikringle glycoprotein constituent of lipoprotein(a), Lp(a), occurs in the plasma mostly bound to apoB100-contg. lipoproteins but also in a free form. Often the properties of these products are detd. after storage in the cold; yet limited information is available on their stability at low temps. To shed light on this subject, we examd. the effect of two parameters, freezing and lyophilization, in either the absence or the presence of cryopreservatives. Lp(a)s each having a single apo(a) size isoform contg. either 14 or 17 kringle (K) IVs were isolated from the plasma of healthy donors by combining d. gradient ultracentrifugation and lysine-Sepharose column chromatog. using solns. contg. both antioxidants and proteolytic inhibitors. Apo(a) was obtained from parent Lp(a) by a mild limited reductive procedure. Either freezing at -20.degree. or lyophilization in the presence of 5% sucrose did not change the electrophoretic, immunochem., and lysine-binding properties of Lp(a) including its ability to generate free apo(a). Irresp. of source, apo(a) remained stable when either frozen at -20 and -80.degree. or lyophilized in the presence of 125 mM **trehalose**. In all cases, the absence of cryopreservatives caused the samples to aggregate irreversibly. Thawed or reconstituted samples of both free and bound apo(a) kept at 4.degree. under sterile conditions in the presence of antioxidants, proteolytic inhibitors, and cryopreservative exhibited no significant changes in properties within the time of observation. Both apo(a) isoforms gave comparable results. We conclude that apo(a), either free or bound, can be kept stable at low temps. in the presence of appropriate cryopreservatives. (c) 2001 Academic Press.
ST apolipoprotein lipoprotein a Lpa freezing lyophilization storage

cryopreservation human
IT Apolipoproteins
Lipoproteins
RL: ANT (Analyte); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(Lp(a); properties of human free apolipoprotein(a) and lipoprotein(a) after either freezing or lyophilization in presence and absence of cryopreservatives)
IT **Cryopreservation**
Freeze drying
Freezing
Preservatives
Storage
(properties of human free apolipoprotein(a) and lipoprotein(a) after either freezing or lyophilization in presence and absence of cryopreservatives)
IT 57-50-1, Sucrose, analysis **99-20-7, Trehalose**
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(properties of human free apolipoprotein(a) and lipoprotein(a) after either freezing or lyophilization in presence and absence of cryopreservatives)
RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Draber, P; J Immunol Methods 1995, V181, P37 HCAPLUS
(2) Edelstein, C; Biochemistry 1995, V34, P16483 HCAPLUS
(3) Edelstein, C; J Biol Chem 1999, V274, P10019 HCAPLUS
(4) Edelstein, C; J Biol chem 1997, V272, P11079 HCAPLUS
(5) Edelstein, C; J Lipid Res 1996, V37, P1786 HCAPLUS
(6) Fless, G; Biochemistry 1994, V33, P13492 HCAPLUS
(7) Fless, G; J Lipid Res 1989, V30, P651 HCAPLUS
(8) Klezovitch, O; J Biol Chem 1998, V273, P23856 HCAPLUS
(9) Kostner, G; J Lipid Res 1999, V40, P2255 HCAPLUS
(10) Lackner, C; J Clin Invest 1991, V87, P2153 HCAPLUS
(11) Leslie, S; Appl Environ Microbiol 1995, V61, P3592 HCAPLUS
(12) Marcovina, S; Clin Chem 1995, V41, P246 HCAPLUS
(13) Phillips, M; Biochemistry 1993, V32, P3722 HCAPLUS
(14) Sattler, W; Biochim Biophys Acta 1991, V1081, P65 HCAPLUS
(15) Schumaker, V; Methods Enzymol 1986, V128, P155 HCAPLUS
(16) Shoukry, M; Biochim Biophys Acta 1994, V1210, P355 HCAPLUS
(17) Sola-Penna, M; Z Naturforsch 1994, V49c, P327
(18) Uritani, M; J Biochem 1995, V117, P774 HCAPLUS
(19) Wilkie, S; BioChromatography 1988, V5, P205
IT **99-20-7, Trehalose**
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(properties of human free apolipoprotein(a) and lipoprotein(a) after either freezing or lyophilization in presence and absence of cryopreservatives)
RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L73 ANSWER 10 OF 11 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2000:693284 HCAPLUS
DN 134:249126
TI Stabilization and Preservation of Lactobacillus acidophilus in Saccharide Matrices
AU Conrad, Paul B.; Miller, Danforth P.; Cielenski, Peter R.; de Pablo, Juan J.
CS Department of Chemical Engineering, University of Wisconsin-Madison, Madison, WI, 53706, USA
SO Cryobiology (2000), 41(1), 17-24
CODEN: CRYBAS; ISSN: 0011-2240
PB Academic Press
DT Journal
LA English
CC **9-11** (**Biochemical Methods**)
Section cross-reference(s): 10
AB Lyophilization and vacuum- or spray-drying are some of the most useful techniques for preserving foods, agricultural products, and pharmaceuticals. Biol. materials, however, can be irreversibly damaged during these treatments. Therefore, it is essential to design protective agents to preserve protein activity and cell viability. In this paper we examine the use of .alpha.,.alpha.-**trehalose**-borate systems as protectants for Lactobacillus acidophilus during freeze- and vacuum-drying. **Trehalose** was found to be an effective protectant for freeze-dried and vacuum-dried samples, and it is equiv. to a protective formulation which is in current industrial use. It is known from our previous work on enzymes that the presence of borate can dramatically enhance the protective ability of **trehalose**. In this work, the addn. of **trehalose**-borate to bacterial conc. greatly improves the recovery of viable cells after storage. This improvement was seen in freeze-dried samples stored at 37.degree. as well as for vacuum-dried samples held at room temp. A tailored buffering strategy was tested to counteract the high pH resulting from the addn. of borate to the mixt. Use of citric or lactic acids in combination with ammonium hydroxide gave a protectant soln. with high pH (resulting in effective crosslinking between **trehalose** and borate) but a dry product with reduced pH upon rehydration (conducive to cell survival). These results raise exciting possibilities for protection of more labile prokaryotic species as well as simple eukaryotes. (c) 2000 Academic Press.
ST stabilization preservation Lactobacillus acidophilus saccharide
IT **Hydration, physiological**
(rehydration; stabilization and preservation of Lactobacillus acidophilus in saccharide matrixes)
IT **Drying**
(spray; stabilization and preservation of Lactobacillus acidophilus in saccharide matrixes)
IT Biological materials
Buffers

Concentration (condition)
Crosslinking
Eukaryote (Eukaryotae)
Freeze drying
Lactobacillus acidophilus
Preservation
Prokaryote
Stabilizing agents
Storage
pH
(stabilization and preservation of Lactobacillus acidophilus in saccharide matrixes)

IT Carbohydrates, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(stabilization and preservation of Lactobacillus acidophilus in saccharide matrixes)

IT **Drying**
(vacuum; stabilization and preservation of Lactobacillus acidophilus in saccharide matrixes)

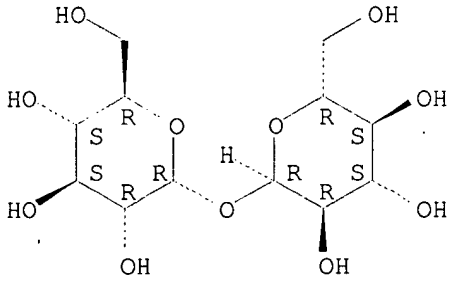
IT 50-21-5, Lactic acid, biological studies 77-92-9, Citric acid, biological studies **99-20-7, Trehalose** 1336-21-6, Ammonium hydroxide 11129-12-7, Borate
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(stabilization and preservation of Lactobacillus acidophilus in saccharide matrixes)

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Aldous, B; Cryo-Lett 1995, V16, P181 HCAPLUS
(2) Benhra, A; Cryo-Lett 1994, V15, P269
(3) Chesne, C; Cryobiology 1988, V25, P323 MEDLINE
(4) Conrad, P; J Phys Chem 1999, V103, P4049 HCAPLUS
(5) Crowe, J; Biochim Biophys Acta 1988, V947, P367 HCAPLUS
(6) Crowe, J; Biopharm 1993, V6, P28 HCAPLUS
(7) Crowe, J; Biopharm 1993, V6, P40 HCAPLUS
(8) Crowe, L; Biophys J 1996, V71, P2087 HCAPLUS
(9) Damjanovic, V; Cryobiology 1972, V9, P565 MEDLINE
(10) Fuller, B; Cryo-Lett 1980, V1, P139 HCAPLUS
(11) Green, J; J Phys Chem 1989, V93, P2880 HCAPLUS
(12) Hoekstra, F; Comp Biochem Physiol A 1997, V117, P335
(13) Mazur, P; Science 1970, V168, P939 MEDLINE
(14) Miller, D; Pharm Res 1997, V14, P578 HCAPLUS
(15) Miller, D; Pharm Res 1998, V15, P1215 HCAPLUS
(16) Pringle, M; Effects of Low Temperature on Biological Systems 1981, P21 HCAPLUS
(17) Rudolph, A; Arch Biochem Biophys 1986, V245, P134 HCAPLUS
(18) Stiff, P; Blood 1987, V70, P974 MEDLINE

IT **99-20-7, Trehalose**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(stabilization and preservation of Lactobacillus acidophilus in saccharide matrixes)

RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

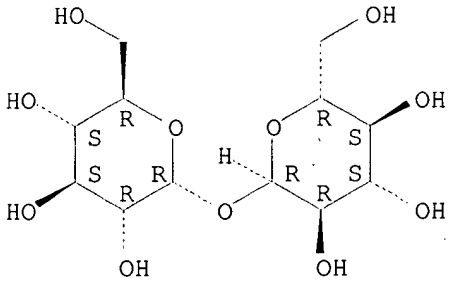


L73 ANSWER 11 OF 11 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2000:107596 HCAPLUS
DN 132:233904
TI **Trehalose** expression confers desiccation tolerance on human cells
AU Guo, Ning; Puhlev, Iskren; Brown, David R.; Mansbridge, Jonathan; Levine, Fred
CS Center for Molecular Genetics, UCSD School of Medicine, La Jolla, CA, 92093-0634, USA
SO Nature Biotechnology (2000), 18(2), 168-171
CODEN: NABIF9; ISSN: 1087-0156
PB Nature America
DT Journal
LA English
CC **9-11 (Biochemical Methods)**
Section cross-reference(s): 13
AB Many organisms that withstand desiccation express the disaccharide **trehalose**. We have now expressed the otsA and otsB genes of Escherichia coli, which encode **trehalose** biosynthetic enzymes, in human primary fibroblasts using a recombinant adenovirus vector. Infected cells produced increased amts. of **trehalose** with increasing multiplicity of infection (MOI). Human primary fibroblasts expressing **trehalose** could be maintained in the dry state for up to five days. Fourier transform IR spectroscopy indicated that dry, but viable, human cells contained no detectable water. This study shows that mammalian cells can be engineered to retain viability in the absence of water.
ST **trehalose** desiccation tolerance dehydration tissue preservation fibroblast
IT **Dehydration, physiological**
Fibroblast
(**trehalose** expression and desiccation tolerance on human cells)
IT **Organ preservation**
(**trehalose** expression and desiccation tolerance on human cells in relation to)
IT **99-20-7, Trehalose**
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence)
(**trehalose** expression and desiccation tolerance on human cells)
RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Allison, S; Arch Biochem Biophys 1999, V365, P289 HCAPLUS
(2) Arakawa, T; Cryobiology 1990, V27, P401 HCAPLUS
(3) Beattie, G; Diabetes 1997, V46, P519 HCAPLUS
(4) Berkner, K; Curr Top Microbiol Immunol 1991, V158, P39
(5) Crowe, J; Annu Rev Physiol 1992, V54, P579 HCAPLUS

(6) Crowe, J; Annu Rev Physiol 1998, V60, P73 HCAPLUS
(7) Crowe, J; Biochem J 1987, V242, P1 HCAPLUS
(8) Crowe, L; Dev Biol Standardization 1992, V74, P285 HCAPLUS
(9) Hirata, T; Surgery 1994, V115, P102 MEDLINE
(10) Kaasen, J; Gene 1994, V145, P9
(11) Leibowitz, G; Diabetes 1999, V48, P745 HCAPLUS
(12) Leslie, S; Appl Environ Microbiol 1995, V61, P3592 HCAPLUS
(13) Leslie, S; Biochim Biophys Acta 1994, V1192, P7 HCAPLUS
(14) Naughton, G; Artif Organs 1997, V21, P1203 MEDLINE
(15) Pelletier, J; Nature 1988, V334, P320 HCAPLUS
(16) Singer, M; Mol.Cell 1998, V1, P639 HCAPLUS
(17) Slade, L; Adv Exp Med Biol 1991, V302, P29 HCAPLUS
(18) Spessot, R; Virology 1989, V168, P378 HCAPLUS
(19) Sun, W; Biophys J 1996, V70, P1769 HCAPLUS
(20) Thevelein, J; Trends Biochem Sci 1995, V20, P3 HCAPLUS
(21) Wiemken, A; Antonie Van Leeuwenhoek 1990, V58, P209 HCAPLUS

IT **99-20-7, Trehalose**
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence)
(**trehalose** expression and desiccation tolerance on human cells)
RN 99-20-7 HCAPLUS
CN .alpha.-D-Glucopyranoside, .alpha.-D-glucopyranosyl (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



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=> d l90 all tot abeq tech abex

L90 ANSWER 1 OF 2 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
AN 2001-080827 [09] WPIX
DNC C2001-023329
TI Preserving biologically active material, particularly viruses such as measles, mumps, and rubella, comprises mixing a biological suspension with a sterile mixture of **chitosan**.
DC B04 C06 D16 D22
IN **WORRALL, E E**
PA (WORR-I) WORRALL E E
CYC 94
PI WO 2000078924 A1 20001228 (200109)* EN 24p C12N001-04 <--
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000054135 A 20010109 (200122) C12N001-04 <--
EP 1187907 A1 20020320 (200227) EN C12N001-04 <--
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
CN 1357037 A 20020703 (200265) C12N001-04 <--
ADT WO 2000078924 A1 WO 2000-GB2254 20000621; AU 2000054135 A AU 2000-54135 20000621; EP 1187907 A1 EP 2000-938911 20000621, WO 2000-GB2254 20000621; CN 1357037 A CN 2000-809328 20000621
FDT AU 2000054135 A Based on WO 2000078924; EP 1187907 A1 Based on WO 2000078924
PRAI GB 1999-14412 19990622
IC ICM **C12N001-04**
AB WO 200078924 A UPAB: 20010213
NOVELTY - Preserving biologically-active material, comprising mixing an aqueous suspension of the material with a sterile aqueous solution of **chitosan** to form a coacervate, adding a sterile aqueous solution of **trehalose**, drying the mixture at low pressure, and at a temperature, initially no more than 37 deg. C, which is subsequently controlled not to fall to 0 deg. C or below to form a glassy porous matrix, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) making a vaccine, comprising preserving a biologically active material using the novel method, and rehydrating the glassy product in an aqueous medium; and

(2) a rehydratable composition comprising **trehalose** in the form of a metastable containing, within the matrix, desiccated biologically material and **chitosan** or its non-toxic salt.

USE - The process is used to preserve viruses (e.g. Rinderpest virus, Peste de Petit Ruminants virus, Measles, Mumps, Rubella, Yellow Fever, Polio and Newcastle Disease Virus), bacteria, Contagious Bovine Pleuropneumonia (CBPP) mycoplasma, tertiary structured biologically-active protein and nucleic acid (all claimed).

Dwg.0/0
FS CPI
FA AB; DCN
MC CPI: **B04-C02E3**; B04-E01; B04-F11; B04-N05; B07-A02B; B14-S11;

C04-C02E3; C04-E01; C04-F11; C04-N04; C07-A02B; C14-S11; D05-H07; D09-A01

TECH UPTX: 20010213

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Materials: The sterile aqueous solution of **chitosan** or its non-toxic salt has a **chitosan** concentration of 0.01 % w/v. The sterile aqueous **chitosan** solution and the aqueous suspension of biologically-active material are mixed at a volume ratio of 1:1 at pH 7.4. The coacervate of biologically-active material and **chitosan** is subjected to vortex mixing. The coacervate is mixed with a sterile aqueous **trehalose** solution having a **trehalose** concentration in the range of from 0.20-20, especially 5 % w/v. The mixture is subjected to drying for 30-60 minutes, at a pressure of less than atmospheric and at no more than 37 degrees C, and which is controlled not to fall to 0 degrees C, and which is finally no greater than 40 degrees C, to form a glassy porous matrix comprising glassy **trehalose** having a residual moisture content not greater than 10 % and containing, within the matrix, desiccated biologically-active material and **chitosan** or its non-toxic salt. The drying stage is carried out at a pressure of not greater than 800 mbar. The resulting **trehalose** matrix is subjected to a secondary drying procedure. The residual moisture content at the end of the secondary drying step is 1.0 % or lower. The vaccine is for oral or intranasal use. The vaccine is a Measles, Mumps, Rubella (MMR) vaccine.

ABEX UPTX: 20010213

EXAMPLE - Rinderpest virus RBOK strain was grown in vero cells in Hanks LYE (lactalbumin hydrolysate and yeast extract) medium containing 0.1 % **trehalose** instead of glucose. Contagious Bovine Pleuropneumonia (CBPP) Mycoplasma mycoides subs.mycoides S1144 (SC) TI-SR was grown in Gourlay medium. The virus pool and the CBPP pool were then harvested. The pH of the virus and the CBPP pool were adjusted with 0.1 M NaOH to pH 7.4. A stock solution of 50 % w/v **trehalose** dehydrate in Hanks Balanced Salt Solution (HBSS) was prepared the pH being adjusted by the addition of 0.1 M NaOH to 7.4. The solution was sterilized by autoclaving at 121 degrees C for 20 minutes. A suitable volume of working strength 0.02 % w/v **chitosan** was prepared by adding 1 ml of stock 2 % w/v **chitosan** to 99 ml of sterile distilled water. One volume of 0.02 % w/v **chitosan** solution was added to one volume of virus fluid at 4 degrees C and the pH adjusted to 7.4 with 0.1 M NaOH. This step was repeated separately for the CBPP culture pool and the resulting coacervation complex of each was completed by rapid vortex stirring for 30 seconds and subsequently stored at 4 degrees C for 1 hour. The resulting precipitate of each was collected by centrifugation at 10000 revolutions per minute (rpm) in a refrigerated centrifuge, the supernatant discarded and the coacervate resuspended in one volume of Hanks balanced salt solution (HBSS). A volume of sterile 50 % w/v solution of **trehalose** in Hanks balanced salt solution (HBSS) was added to the coacervate suspension give a final **trehalose** concentration of 5 % w/v (potency is checked by the quality control standard operating procedures for these organisms). The vaccine was dried by filling 1.0 ml aliquots into 5 mi vaccine vials partially stoppered with dry butyl rubber stoppers. The shelves of the conventional freeze dryer (EDWARDS MODULYO) were heated to 37 degrees C and the condenser was allowed to reach minus 40 degrees C. The vaccine vials were placed in the dryer and the pressure in the drying chamber was adjusted to 800 mbar and drying commenced for 30 minutes until 75 % of the water had evaporated, taking care not to allow the product temperature to fall below 0 degrees C. The pressure was then lowered to 500 mbar and drying was continued until the glass transition temperature of **trehalose** was reached at 25 degrees C, a glassy porous matrix was formed, and the temperature of the product was allowed to rise to reach the initial starting temperature close to that of the shelves. At this stage the residual moisture (RM) was 10 %. Further drying at 0.01 mbar and 45 degrees C for 17 hours reduced this to 1-2 % RM

ensuring high thermostability in the product. The pressure was maintained at 0.01 mbar and the vials were sealed under vacuum or at atmospheric pressure under dry nitrogen.

L90 ANSWER 2 OF 2 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
AN 2000-679756 [66] WPIX
DNC C2000-206828
TI Preservation of viruses and mycoplasma for vaccines in a trehalose matrix, with increased thermostability.
DC B04 C06 D16
IN **WORRALL, E E**
PA (WORR-I) WORRALL E E; (ANHY-N) ANHYDRO LTD
CYC 91
PI WO 2000066710 A2 20001109 (200066)* EN 24p C12N001-04
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000045844 A 20001117 (200111) C12N001-04
EP 1175486 A2 20020130 (200216) EN C12N001-04
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
BR 2000010249 A 20020213 (200220) C12N001-04
KR 2002012201 A 20020215 (200257) C12N001-04
JP 2002542815 W 20021217 (200312) 28p C12N007-00
ZA 2001008677 A 20030326 (200327) 42p C12N000-00
ADT WO 2000066710 A2 WO 2000-GB1524 20000503; AU 2000045844 A AU 2000-45844 20000503; EP 1175486 A2 EP 2000-927438 20000503, WO 2000-GB1524 20000503; BR 2000010249 A BR 2000-10249 20000503, WO 2000-GB1524 20000503; KR 2002012201 A KR 2001-714025 20011102; JP 2002542815 W JP 2000-615735 20000503, WO 2000-GB1524 20000503; ZA 2001008677 A ZA 2001-8677 20011022
FDT AU 2000045844 A Based on WO 2000066710; EP 1175486 A2 Based on WO 2000066710; BR 2000010249 A Based on WO 2000066710; JP 2002542815 W Based on WO 2000066710
PRAI GB 1999-26698 19991112; GB 1999-9999 19990504
IC ICM C12N000-00; C12N001-04; C12N007-00
ICS A61K039-00; A61K039-12; A61K039-13; A61K039-155; A61K039-165; A61K039-17; A61K039-20; C12N007-02
ICI C12N001-04; C12N007-00; C12R001:93; C12R001:93
AB WO 200066710 A UPAB: 20001219
NOVELTY - Preserving viruses and mycoplasma comprising desiccation without lyophilization, is new.

DETAILED DESCRIPTION - Preserving viruses and mycoplasma comprising desiccation without lyophilization, is new. The method comprises:

(1) mixing an aqueous suspension of the biologically-active material with a sterile aqueous solution of trehalose to give a trehalose concentration of 0.2-10 % w/v;

(2) subjecting the mixture to primary drying for 30-60 minutes at 0-37 deg. C initially and 0-40 deg. C finally, at at least atmospheric pressure, to form a glassy porous matrix comprising glassy trehalose with a residual moisture content of no more than 10 %, and containing within the matrix, desiccated biologically active material; and

(3) subjecting the matrix to secondary drying for 10-30 hours at a no more than 0.1 mbar and 40-45 deg. C, to form a trehalose matrix with residual moisture content of no more than 2 %.

INDEPENDENT CLAIMS are also included for the following:

(1) a rehydratable composition made by the novel method; and

(2) making a vaccine comprising rehydrating the composition in an appropriate aqueous medium.

USE - For preserving viruses and mycoplasma for use in vaccines (claimed).

ADVANTAGE - The method is much faster than prior freeze drying methods, a moisture content of less than 10 % can be achieved in less than an hour, and damage caused by solute concentration and ice crystallisation is minimized. The preserved material is thermostable and it can be exposed to temperatures of up to 45 deg. C without loss of biological activity. The material can be instantly rehydrated.

Dwg.0/1

FS CPI

FA AB; DCN

MC CPI: B04-F10A4; B04-F11; B10-A07; B14-S11; C04-F10A4; C04-F11; C10-A07; C14-S11; D05-H07; D05-H10

TECH UPTX: 20001219

TECHNOLOGY FOCUS - BIOLOGY - Preferred Method: The secondary drying step is for 20-30, preferably 15-17 hours at 37 degrees C, then at 40-45 degrees C for the remaining time. The trehalose concentration is 2-10, especially 2.5-8 % w/v. The primary drying step pressure is no more than 800 mbar, and the residual moisture content after this step is 10 %. Preferred Material: The virus is selected from Rinderpest, Peste des Petits Ruminants, Measles, Mumps, Rubella, Yellow Fever, Polio and Newcastle Disease viruses, especially Rinderpest or Peste des Petits Ruminants. The mycoplasma is Contagious Bovine Pleuropneumonia mycoplasma.

ABEX UPTX: 20001219

EXAMPLE - The thermostability of viruses was measured when subjected to different lengths of secondary dehydration. Rinderpest viruses subjected to 17 hours secondary drying had a virus titer of 4.97 on the first day, and 3.03 after 14 days, when stored at 45 degrees C, compared to 5.40 and 0.0 respectively for peste des petits ruminants virus subjected to only 2 hours secondary drying. This shows how the low moisture levels (less than 1 %) after extended secondary drying gives increased thermostability.

=> d his

(FILE 'HOME' ENTERED AT 15:17:49 ON 07 OCT 2003)
SET COST OFF

FILE 'REGISTRY' ENTERED AT 15:18:00 ON 07 OCT 2003
E CHITOSAN/CN
L1 1 S E3
E CHITOSAN
L2 1498 S E3
L3 1497 S L2 NOT L1
L4 1433 S L3 NOT SQL/FA
E TREHALOSE/CN
L5 1 S E3
L6 115 S 99-20-7/CRN
L7 763 S 9012-76-4/CRN
L8 0 S L6 AND L7
L9 1433 S L4,L7

FILE 'HCAPLUS' ENTERED AT 15:20:48 ON 07 OCT 2003
L10 12093 S L1
L11 3160 S L9
L12 15211 S CHITOSAN
L13 3172 S L3
L14 15784 S L10-L13
L15 5999 S L5
L16 167 S L6
L17 8262 S TREHALOSE
L18 8696 S L15-L17
L19 72 S L14 AND L18
L20 70 S L19 AND (PY<=1999 OR PRY<=1999 OR AYT<=1999)
E WORRALL E/AU

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L21           8 S E3,E4,E9
                E ANHYDRO/PA,CS
L22          35 S E3-E13
                E WO2000-GB2254/AP,PRN
                E GB99-14412/AP,PRN
L23          43 S L21,L22
L24           0 S L23 AND L14
L25           3 S L23 AND L18
                E PRESERVATION/CT
                E E3+ALL
L26        2148 S E1
L27       11897 S E1+NT
                E E14+ALL
L28         423 S E3
L29         601 S E3+NT
                E E2+ALL
L30        5084 S E2
L31          42 S L18 AND L26
L32         214 S L18 AND L27-L30
L33           4 S L14 AND L26
L34         194 S L14 AND L27-L30
L35           8 S L31,L32 AND L33,L34
                SEL DN AN 4
L36           1 S L35 AND E1-E3
L37           4 S L25,L36
                E FREEZE DRYING/CT
                E E3+ALL
L38        4716 S E12
                E E15+ALL
L39       19277 S E2,E1+NT
L40         297 S L18 AND L38
L41         139 S L18 AND L39
L42          68 S L14 AND L38
L43          20 S L14 AND L39
L44           8 S L19 AND L31-L34
L45           5 S L19 AND L40-L43
L46          12 S L44,L45
L47           1 S L46 AND L37
L48          11 S L46 NOT L47
                SEL DN AN 6 7
L49           2 S E1-E6 AND L48
L50           6 S L37,L47,L49
L51           6 S L50 AND L10-L50
                E DRYING/CT
                E E3+ALL
L52       32988 S E2
                E E1+ALL
L53         443 S E1
                E E6+ALL
L54       19277 S E2,E1+NT
                E E13+ALL
L55       25489 S E6,E7,E5
L56         334 S L18 AND L52-L55
L57         133 S L14 AND L52-L55
L58           6 S L19 AND L56,L57
L59           3 S L51 AND L52-L57
L60           6 S L51,L59
L61         637 S (BIOCHEM?(L)METHOD?)/SC,SX AND L14
L62         649 S (BIOCHEM?(L)METHOD?)/SC,SX AND L18
L63          95 S L61,L62 AND L31-L34
L64          22 S L63 AND L38-L41
L65          21 S L63 AND L52-L57
L66          27 S L64,L65
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L67          16 S L66 AND (PY<=1999 OR PRY<=1999 OR AY<=1999)
L68           0 S L66 AND L19
L69          11 S L66 NOT L67
L70          32 S L60,L67,L69
L71          19 S L70 AND (PY<=1999 OR PRY<=1999 OR AY<=1999)
L72          21 S L37,L71
L73          11 S L70 NOT L72
                SEL HIT RN L70

     FILE 'REGISTRY' ENTERED AT 15:58:09 ON 07 OCT 2003
L74           2 S E1-E2

     FILE 'REGISTRY' ENTERED AT 15:58:19 ON 07 OCT 2003

     FILE 'HCAPLUS' ENTERED AT 15:58:29 ON 07 OCT 2003

     FILE 'WPIX' ENTERED AT 16:00:07 ON 07 OCT 2003
                E WORRAL E/AU
L75           2 S E15
                E CHITOSAN/DCN
                E E3+ALL
L76        1505 S E2
L77.        873 S E4
                E TREHALOSE/DCN
                E E3+ALL
L78         700 S E2
L79        1670 S (B04-C02E3 OR C04-C02E3)/MC
L80       11360 S (B10-A07 OR C10-A07)/MC
L81         553 S C12N001-04/IC,ICM,ICS
L82          38 S C12N001-04/ICA,ICI
L83           3 S C12N001:04/ICI
L84        5351 S CHITOSAN/BIX
L85        1534 S TREHALOSE/BIX
L86        5901 S L76,L77,L79,L84
L87       12712 S L78,L80,L85
L88         156 S L86 AND L87
L89           1 S L88 AND L81-L83
L90           2 S L75,L89
L91           9 S L88 AND A61K039/IC,ICM,ICS,ICA,ICI

     FILE 'WPIX' ENTERED AT 16:10:25 ON 07 OCT 2003
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